

```
In [39]: # importing libraries

import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from sklearn.preprocessing import normalize
```

```
In [40]: # reading the gene expression file as pandas dataframe

df = pd.read_csv("GDS2002 - Copy.csv")
gene_names = df['ID_REF']
del df['ID_REF']
```

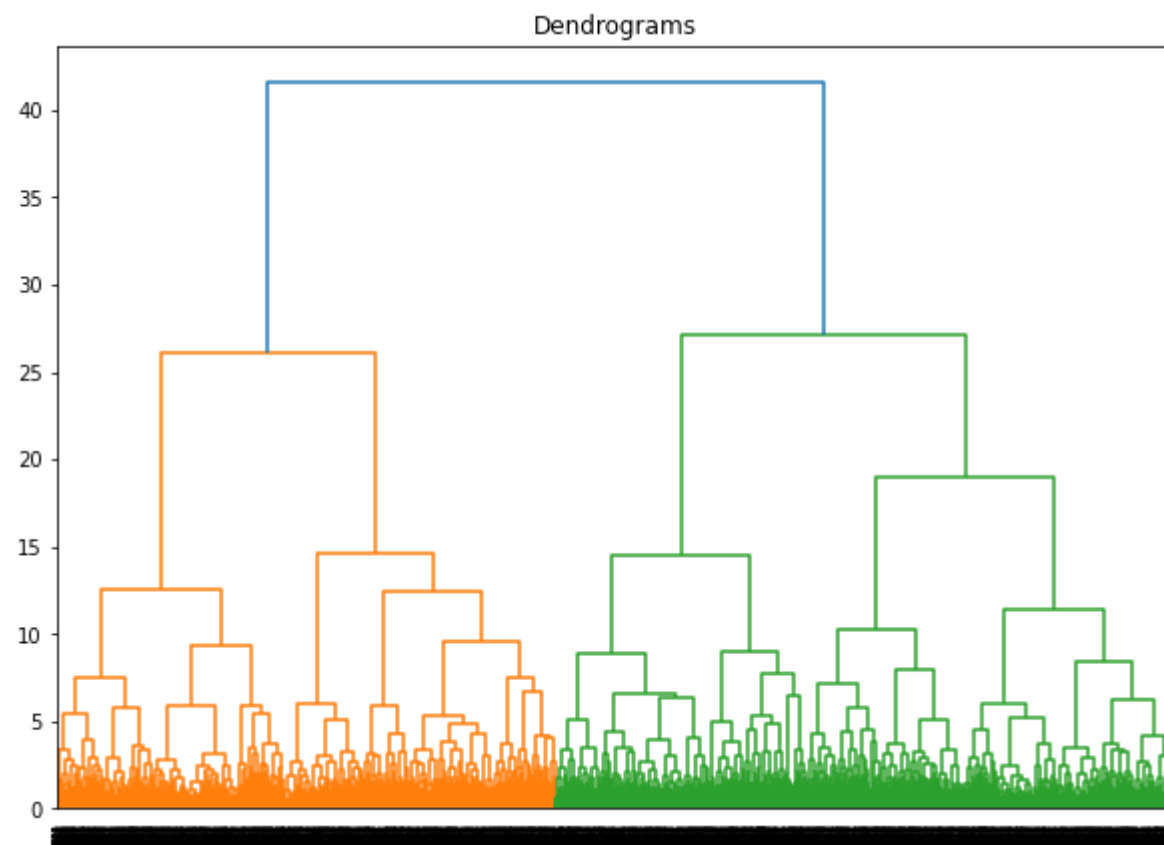
```
In [41]: # replacing the infinite, nan values

df.replace([np.inf, -np.inf], np.nan, inplace=True)
df.fillna(0, inplace=True)

# normalizing the data for faster and homogeneous calculations
data_scaled = normalize(df)
data_scaled = pd.DataFrame(data_scaled, columns=df.columns)
```

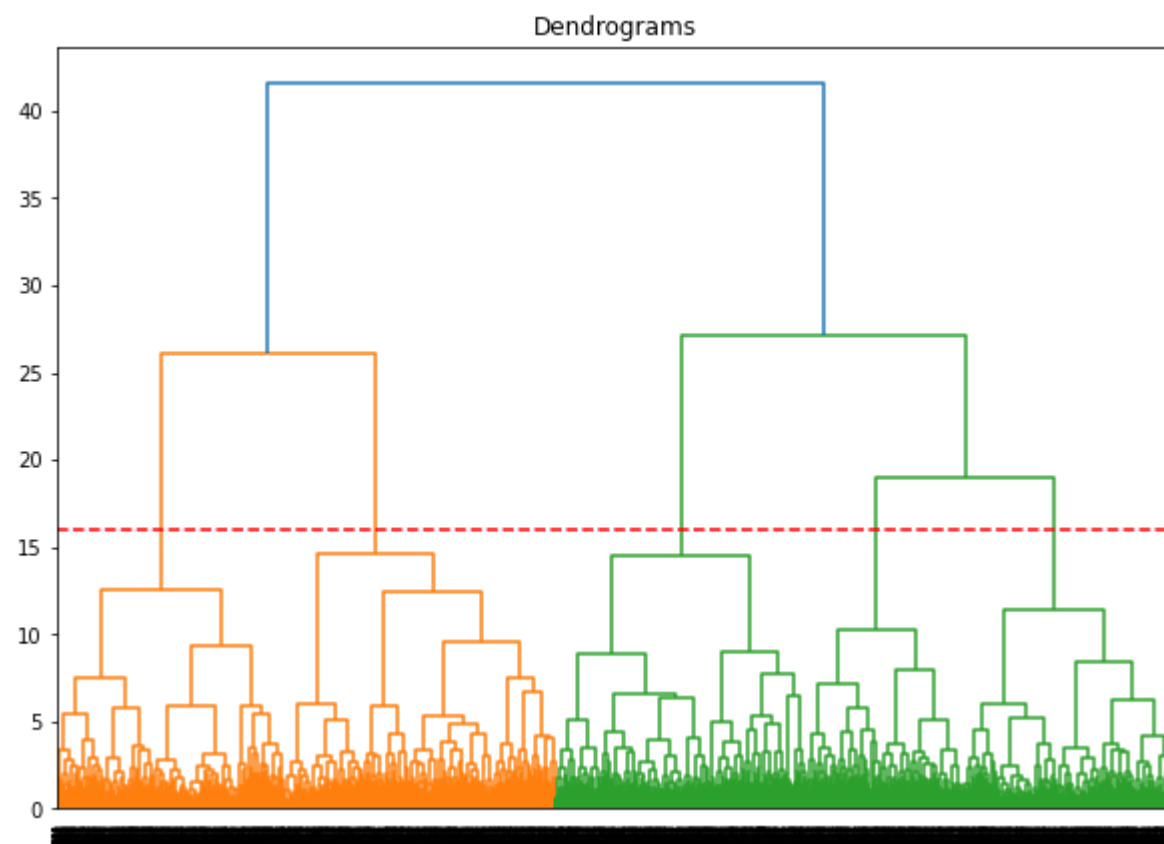
```
In [42]: # plotting the dendrogram using Hierarchical Clustering

import scipy.cluster.hierarchy as shc
plt.figure(figsize=(10, 7))
plt.title("Dendrograms")
dend = shc.dendrogram(shc.linkage(data_scaled, method='ward'))
```



```
In [43]: # Looking at the dendrogram Lets decide the threshold value as 16
```

```
plt.figure(figsize=(10, 7))
plt.title("Dendrograms")
dend = shc.dendrogram(shc.linkage(data_scaled, method='ward'))
plt.axhline(y=16, color='r', linestyle='--')
plt.show()
```



```
In [44]: # we got total 5 clusters, now lets get which gene belong to which cluster

from sklearn.cluster import AgglomerativeClustering
cluster = AgglomerativeClustering(n_clusters=5, affinity='euclidean', linkage='ward')
clusterNumber = cluster.fit_predict(data_scaled)
clusterNumber
```

```
Out[44]: array([2, 2, 2, ..., 0, 0, 4], dtype=int64)
```

```
In [45]: # segregating genes by their cluster numbers

cluster_array = [[], [], [], [], []]
for i in range(len(gene_names)):
    cluster_array[clusterNumber[i]].append(gene_names[i])
index = 0
for cluster in cluster_array:
    print("Genes belonging to Cluster " + str(index)+' :-->\n')
    for gene in cluster:
        print(gene, end=', ')
    print('\n\n')
    index+=1
```

Genes belonging to Cluster 0 :-->

Q0110, YAL007C, YAL023C, YAL024C, YAL026C, YAL029C, YAL034W-A, YAL037W, YAL038W, YAL041W, YAL058W, YAL068C, YAR002C-A, YAR002W, YAR003W, YAR007C, YAR008W, YAR014C, YAR018C, YAR020C, YAR028W, YAR029W, YAR031W, YAR033W, YAR042W, YAR064W, YAR068W, YAR071W, YAR073W, YBL010C, YBL011W, YBL013W, YBL014C, YBL020W, YBL023C, YBL025W, YBL027W, YBL034C, YBL035C, YBL040C, YBL051C, YBL052C, YBL061C, YBL063W, YBL076C, YBL081W, YBL088C, YBL093C, YBL097W, YBL104C, YBL106C, YBL108C-A, YBL111C, YBL112C, YBR002C, YBR005W, YBR015C, YBR028C, YBR029C, YBR030W, YBR034C, YBR035C, YBR038W, YBR042C, YBR043C, YBR055C, YBR057C, YBR058C-A, YBR060C, YBR063C, YBR065C, YBR066C, YBR067C, YBR070C, YBR071W, YBR073W, YBR074W, YBR085W, YBR086C, YBR088C, YBR092C, YBR097W, YBR101C, YBR102C, YBR104W, YBR115C, YBR12

9C, YBR130C, YBR131W, YBR135W, YBR136W, YBR138C, YBR140C, YBR145W, YBR152W, YBR156C, YBR158W, YBR160W, YBR161W, YBR162C, YBR163W, YBR164C, YBR166C, YBR171W, YBR181C, YBR182C, YBR187W, YBR195C, YBR196C, YBR197C, YBR199W, YBR201W, YBR202W, YBR215W, YBR218C, YBR227C, YBR233W-A, YBR238C, YBR239C, YBR243C, YBR245C, YBR250W, YBR252W, YBR253W, YBR254C, YBR256C, YBR259W, YBR264C, YBR265W, YBR275C, YBR279W, YBR286W, YBR289W, YBR293W, YBR301W, YCL001W, YCL001W-A, YCL005W, YCL007C, YCL010C, YCL014W, YCL021W-A, YCL024W, YCL026C-A, YCL030C, YCL037C, YCL038C, YCL045C, YCL050C, YCL061C, YCL063W, YCL073C, YCR005C, YCR014C, YCR015C, YCR017C, YCR023C, YCR024C-A, YCR026C, YCR033W, YCR035C, YCR042C, YCR048W, YCR053W, YCR063W, YCR065W, YCR068W, YCR069W, YCR072C, YCR073C, YCR081W, YCR084C, YCR092C, YCR094W, YCR095C, YCR101C, YCR102C, YCR104W, YCR105W, YDL003W, YDL013W, YDL014W, YDL015C, YDL017W, YDL024C, YDL043C, YDL044C, YDL047W, YDL054C, YDL055C, YDL073W, YDL074C, YDL077C, YDL080C, YDL085C-A, YDL092W, YDL093W, YDL095W, YDL099W, YDL101C, YDL102W, YDL116W, YDL133W, YDL135C, YDL139C, YDL141W, YDL155W, YDL156W, YDL157C, YDL164C, YDL171C, YDL177C, YDL185W, YDL186W, YDL189W, YDL211C, YDL212W, YDL226C, YDL227C, YDL236W, YDL241W, YDR013W, YDR017C, YDR034C, YDR034C-A, YDR044W, YDR055W, YDR062W, YDR064W, YDR075W, YDR076W, YDR079C-A, YDR080W, YDR081C, YDR086C, YDR090C, YDR092W, YDR093W, YDR097C, YDR103W, YDR109C, YDR111C, YDR113C, YDR123C, YDR127W, YDR128W, YDR132C, YDR138W, YDR158W, YDR163W, YDR164C, YDR167W, YDR170C, YDR179C, YDR179W-A, YDR180W, YDR181C, YDR182W, YDR183W, YDR190C, YDR191W, YDR192C, YDR198C, YDR200C, YDR206W, YDR210W, YDR213W, YDR221W, YDR228C, YDR232W, YDR235W, YDR239C, YDR260C, YDR261C, YDR267C, YDR273W, YDR279W, YDR291W, YDR292C, YDR297W, YDR301W, YDR303C, YDR305C, YDR309C, YDR310C, YDR314C, YDR318W, YDR323C, YDR325W, YDR326C, YDR348C, YDR350C, YDR362C, YDR364C, YDR366C, YDR367W, YDR368W, YDR369C, YDR372C, YDR378C, YDR379W, YDR384C, YDR389W, YDR391C, YDR400W, YDR407C, YDR409W, YDR419W, YDR424C, YDR440W, YDR443C, YDR444W, YDR449C, YDR452W, YDR453C, YDR454C, YDR456W, YDR460W, YDR461W, YDR464W, YDR465C, YDR466W, YDR469W, YDR472W, YDR482C, YDR483W, YDR487C, YDR488C, YDR489W, YDR497C, YDR498C, YDR501W, YDR502C, YDR503C, YDR507C, YDR508C, YDR510W, YDR518W, YDR519W, YDR520C, YDR528W, YDR531W, YDR540C, YDR541C, YDR542W, YEL001C, YEL002C, YEL009C, YEL015W, YEL019C, YEL022W, YEL029C, YEL032W, YEL043W, YEL047C, YEL048C, YEL049W, YEL051W, YEL061C, YEL063C, YEL064C, YEL066W, YEL071W, YEL073C, YEL075C, YEL076C, YEL076C-A, YER003C, YER005W, YER010C, YER011W, YER014C-A, YER014W, YER026C, YER030W, YER031C, YER032W, YER034W, YER038C, YER040W, YER043C, YER044C, YER052C, YER057C, YER060W, YER064C, YER069W, YER070W, YER073W, YER075C, YER086W, YER087C-B, YER089C, YER090W, YER091C, YER095W, YER100W, YER105C, YER106W, YER111C, YER112W, YER113C, YER114C, YER115C, YER122C, YER128W, YER130C, YER132C, YER140W, YER147C, YER148W, YER149C, YER153C, YER158C, YER159C, YER161C, YER167W, YER169W, YER171W, YER173W, YER175C, YER176W, YER180C, YER187W, YER189W, YFL003C, YFL008W, YFL010C, YFL017C, YFL020C, YFL028C, YFL034C-B, YFL034W, YFL040W, YFL051C, YFL064C, YFL065C, YFL066C, YFL067W, YFL068W, YFR002W, YFR005C, YFR009W, YFR012W, YFR012W-A, YFR015C, YFR022W, YFR025C, YFR036W, YFR039C, YFR041C, YGL001C, YGL003C, YGL008C, YGL012W, YGL014W, YGL015C, YGL017W, YGL021W, YGL023C, YGL035C, YGL039W, YGL044C, YGL051W, YGL054C, YGL061C, YGL063W, YGL065C, YGL077C, YGL079W, YGL083W, YGL086W, YGL089C, YGL090W, YGL094C, YGL104C, YGL106W, YGL110C, YGL112C, YGL117W, YGL125W, YGL130W, YGL131C, YGL138C, YGL144C, YGL145W, YGL148W, YGL156W, YGL157W, YGL162W, YGL163C, YGL167C, YGL175C, YGL176C, YGL179C, YGL200C, YGL201C, YGL202W, YGL203C, YGL209W, YGL215W, YGL220W, YGL222C, YGL224C, YGL238W, YGL240W, YGL241W, YGL242C, YGL244W, YGL246C, YGL247W, YGL255W, YGL256W, YGL257C, YGL258W-A, YGL259W, YGL261C, YGR004W, YGR015C, YGR016W, YGR017W, YGR020C, YGR024C, YGR036C, YGR041W, YGR042W, YGR046W, YGR047C, YGR049W, YGR056W, YGR060W, YGR066C, YGR068C, YGR071C, YGR072W, YGR074W, YGR083C, YGR095C, YGR096W, YGR097W, YGR098C, YGR099W, YGR100W, YGR102C, YGR105W, YGR106C, YGR108W, YGR109C, YGR113W, YGR119C, YGR126W, YGR129W, YGR131W, YGR134W, YGR161C, YGR166W, YGR168C, YGR172C, YGR175C, YGR177C, YGR180C, YGR188C, YGR189C, YGR192C, YGR198W, YGR199W, YGR204W, YGR208W, YGR213C, YGR221C, YGR222W, YGR225W, YGR240C, YGR254W, YGR260W, YGR261C, YGR267C, YGR275W, YGR279C, YGR294W, YHL009C, YHL017W, YHL019C, YHL020C, YHL022C, YHL026C, YHL027W, YHL029C, YHL042W, YHL043W, YHL046C, YHL049C, YHR005C, YHR006W, YHR007C, YHR014W, YHR018C, YHR022C, YHR023W, YHR026W, YHR029C, YHR034C, YHR035W, YHR036W, YHR039C, YHR039C-A, YHR040W, YHR041C, YHR042W, YHR045W, YHR046C, YHR048W, YHR058C, YHR067W, YHR068W, YHR071W, YHR072W, YHR077C, YHR079C, YHR084W, YHR085W, YHR094C, YHR102W, YHR119W, YHR123W, YHR129C, YHR133C, YHR142W, YHR143W, YHR144C, YHR151C, YHR153C, YHR154W, YHR162W, YHR167W, YHR172W, YHR174W, YHR179W, YHR184W, YHR187W, YHR190W, YHR193C, YHR195W, YHR201C, YHR207C, YHR213W, YHR215W, YHR218W, YIL006W, YIL009C-A, YIL009W, YIL011W, YIL013C, YIL014C-A, YIL014W, YIL026C, YIL029C, YIL035C, YIL047C, YIL048W, YIL053W, YIL066C, YIL067C, YIL074C, YIL079C, YIL083C, YIL085C, YIL091C, YIL102C, YIL104C, YIL111W, YIL114C, YIL116W, YIL139C, YIL140W, YIL143C, YIL145C, YIL149C, YIL158W, YIL160C, YIL161W, YIL169C, YIL176C, YIR007W, YIR008C, YIR009W, YIR010W, YIR018W, YIR022W, YIR023W, YIR027C, YIR031C, YIR033W, YIR034C, YIR041W, YJL006C, YJL019W, YJL025W, YJL026W, YJL027C, YJL029C, YJL030W, YJL034W, YJL037W, YJL038C, YJL041W, YJL043W, YJL044C, YJL045W, YJL049W, YJL052C-A, YJL052W, YJL061W, YJL065C, YJL069C, YJL071W, YJL072C, YJL073W, YJL076W, YJL079C, YJL080C, YJL081C, YJL085W, YJL088W, YJL091C, YJL092W, YJL094C, YJL095W, YJL097W, YJL105W, YJL115W, YJL116C, YJL153C, YJL162C, YJL168C, YJL174W, YJL181W, YJL184W, YJL185C, YJL187C, YJL194W, YJL196C, YJL197W, YJL206C, YJL218W, YJL223C, YJR004C, YJR006W, YJR009C, YJR010C-A, YJR011C, YJR016C, YJR030C, YJR031C, YJR032W, YJR040W, YJR043C, YJR047C, YJR051W, YJR053W, YJR054W, YJR056C, YJR070C, YJR073C, YJR074W, YJR088C, YJR092W, YJR110W, YJR111C, YJR112W, YJR116W, YJR124C, YJR134C, YJR143C, YJR147W, YJR150C, YJR151C, YJR153W, YJR154W, YKL012W, YKL015W, YKL017C, YKL024C, YKL027W, YKL028W, YKL029C, YKL032C, YKL033W, YKL033W-A, YKL034W, YKL042W, YKL046C, YKL047W, YKL048C, YKL049C, YKL057C, YKL058W, YKL059C, YKL060C, YKL062W, YKL063C, YKL068W, YKL069W, YKL071W, YKL072W, YKL073W, YKL080W, YKL089W, YKL096W, YKL106W, YKL107W, YKL110C, YKL112W, YKL113C, YKL116C, YKL122C, YKL124W, YKL128C, YKL130C, YKL139W, YKL140W, YKL152C, YKL154W, YKL162C, YKL165C, YKL182W, YKL198C, YKL209C, YKL211C, YKL212W, YKL224C, YKR004C, YKR010C, YKR011C, YKR023W, YKR024C, YKR029C, YKR041W, YKR053C, YKR060W, YKR064W, YKR069W, YKR072C, YKR077W, YKR082W, YKR091W, YKR094C, YKR099W, YKR101W, YKR106W, YLL001W, YLL002W, YLL003W, YLL004W, YLL012W, YLL021W, YLL022C, YLL025W, YLL043W, YLL056C, YLL058W, YLL064C, YLR005W, YLR010C, YLR019W, YLR032W, YLR034C, YLR037C, YLR040C, YLR043C, YLR047C, YLR049C, YLR050C, YLR056W, YLR057W, YLR059C, YLR065C, YLR066W, YLR084C, YLR086W, YLR088W, YLR092W, YLR094C, YLR099C, YLR100W, YLR102C, YLR103C, YLR104W, YLR105C, YLR119W, YLR121C, YLR133W, YLR147C, YLR170C, YLR173W, YLR179C, YLR181C, YLR183C, YLR187W, YLR188W, YLR190W, YLR194C, YLR210W, YLR223C, YLR226W, YLR227C, YLR228C, YLR243W, YLR256W, YLR265C, YLR272C, YLR273C, YLR274W, YLR285W, YLR286C, YLR292C, YLR297W, YLR298C, YLR300W, YLR301W, YLR310C, YLR313C, YLR314C, YLR318W, YLR320W, YLR343W, YLR347C, YLR348C, YLR355C, YLR363C, YLR372W, YLR376C, YLR378C, YLR380W, YLR381W, YLR383W, YLR386W, YLR403W, YLR404W, YLR407W, YLR410W, YLR412W, YLR413W, YLR414C, YLR415C, YLR417W, YLR418C, YLR422W, YLR427W, YLR431C, YLR437C, YLR438C-A, YLR445W, YLR447C, YLR451W, YLR453C, YLR457C, YLR459W, YLR460C, YLR461W, YLR462W, YLR464W, YML002W, YML008C, YML010W, YML013W, YML018C, YML027W, YML038C, YML046W, YML055W, YML058W, YML058W-A, YML059C, YML062C, YML069W, YML077W, YML081W, YML082W, YML083C, YML088W, YML098W, YML102W, YML103C, YML104C, YML105C, YML107C, YML109W, YML111W, YML113W, YML123C, YML124C, YML130C, YML131W, YMR001C, YMR006C, YMR015C, YMR019W, YMR020W, YMR032W, YMR038C, YMR042W, YMR047C, YMR048W, YMR061W, YMR062C, YMR063W, YMR074C, YMR076C, YMR078C, YMR079W, YMR080C, YMR093W, YMR094W, YMR117C, YMR118C, YMR130W, YMR134W, YMR147W, YMR149W, YMR153W, YMR162C, YMR177W, YMR179W, YMR182C, YMR195W, YMR199W, YMR200W, YMR202W, YMR205C, YMR207C, YMR212C, YMR213W, YMR214W, YMR215W, YMR218C, YMR227C, YMR231W, YMR232W, YMR239C, YMR246W, YMR252C, YMR263W, YMR274C, YMR278W, YMR285C, YMR288W, YMR298W, YMR303C, YMR306W, YMR316W, YMR317W, YMR319C, YMR325W, YNL010W, YNL018C, YNL019C, YNL020C, YNL021W, YNL024C, YNL034W, YNL042W, YNL044W, YNL046W, YNL054W, YNL066W, YNL068C, YNL074C, YNL077W, YNL080C, YNL082W, YNL085W, YNL090W, YNL094W, YNL102W, YNL111C, YNL116W, YNL126W, YNL128W, YNL129W, YNL130C, YNL133C, YNL147W, YNL148C, YNL152W, YNL154C, YNL161W, YNL166C, YNL169C, YNL180C, YNL188W, YNL189W, YNL191W, YNL192W, YNL199C, YNL201C, YNL206C, YNL210W, YNL216W, YNL218W, YNL230C, YNL233W, YNL238W, YNL246W, YNL250W, YNL257C, YNL263C, YNL264C, YNL272C, YNL273W, YNL279W, YNL280C, YNL282W, YNL288W, YNL289W, YNL290W, YNL298W, YNL300W, YNL308C, YNL309W, YNL310C, YNL312W, YNL316C, YNL317W, YNL326C, YNL327W, YNL328C, YNR009W, YNR011C, YNR027W, YNR057C, YNR058W, YNR062C, YNR063W, YNR066C, YNR067C, YNR068C, YNR069C, YNR071C, YNR075W, YNR076W, YOL002C, YOL004W, YOL006C, YOL007C, YOL011W, YOL014W, YOL015W, YOL017W, YOL031C, YOL045W, YOL056W, YOL057W, YOL058W, YOL059W, YOL067C, YOL075C, YOL076W, YOL078W, YOL080C, YOL086C, YOL086W-A, YOL090W, YOL091W, YOL094C, YOL095C, YOL097C, YOL098C, YOL101C, YOL102C, YOL104C, YOL107W, YOL115W, YOL129W, YOL132W, YOL136C, YOL138C, YOL140W, YOL145C, YOL146W, YOL148C, YOL149W, YOL155C, YOL161C, YOL162W, YOR009W, YOR010C, YOR011W, YOR012W, YOR022C, YOR025W, YOR026W, YOR030W, YOR032C, YOR033C, YOR034C, YOR038C, YOR043W, YOR044W, YOR047C, YOR051C, YOR057W, YOR058C, YOR060C, YOR061W, YOR066W, YOR067C, YOR071C, YOR073W, YOR074C, YOR079C, YOR080W, YOR099W, YOR103C, YOR106W, YOR114W, YOR115C, YOR123C, YOR129C, YOR130C, YOR140W, YOR143C, YOR144C, YOR148C, YOR156C, YOR160W, YOR165W, YOR166C, YOR175C, YOR190W, YOR191W, YOR192C, YOR194C, YOR195W, YOR197W, YOR210W, YOR212W, YOR216C, YOR222W, YOR230W, YOR237W, YOR239W, YOR242C, YOR254C, YOR265W, YOR269W, YOR279C, YOR283W, YOR284W, YOR287C, YOR304W, YOR306C, YOR316C, YOR319W, YOR320C, YOR321W, YOR322C, YOR323C, YOR324C, YOR326W, YOR332W, YOR337W, YOR354C, YOR360C, YOR363C, YOR374W, YOR375C, YOR377W, YOR378W, YOR385W, YPL001W, YPL002C, YPL004C, YPL009C, YPL012W, YPL019C, YPL020C, YPL027W, YPL034W, YPL037C, YPL038W, YPL041C, YPL049C, YPL053C, YPL063W, YPL079W, YPL082C, YPL083C, YPL088W, YPL090C, YPL099C, YPL109C, YPL117C, YPL122C, YPL123C, YPL125W, YPL127C, YPL128C, YPL129W, YPL130W, YPL133C, YPL138C, YPL140C, YPL141C, YPL143W, YPL147W, YPL149W, YPL150W, YPL152W, YPL153C, YPL160W, YPL161C, YPL162C, YPL164C, YPL169C, YPL184C, YPL193W, YPL214C, YPL228W, YPL230W, YPL234C, YPL240C, YPL243W, YPL246C, YPL253C, YPL266W, YPL279C, YPR003C, YPR009W, YPR022C, YPR028W, YPR031W, YPR033C, YPR041W, YPR045C, YPR047W, YPR051W, YPR052C, YPR062W, YPR073C, YPR078C, YPR085C, YPR086W, YPR089W, YPR095C, YPR097W, YPR101W, YPR111W, YPR113W, YPR116W, YPR119W, YPR120C, YPR133C, YPR135W, YPR137W, YPR141C, YPR157W, YPR158W, YPR164W, YPR167C, YPR168W, YPR173C, YPR174C, YPR175W, YPR186C, YPR188C, YPR190C, YPR198W, YPR202W, YPR203W,

Genes belonging to Cluster 1 :-->

YAL003W, YAL019W, YAL025C, YAL033W, YAL035W, YAL036C, YAL044C, YAL047C, YAL059W, YAR015W, YAR075W, YBL002W, YBL003C, YBL004W, YBL005W, YBL009W, YBL018C, YBL024W, YBL028C, YBL036C, YBL039C, YBL042C, YBL054W, YBL057C, YBL067C, YBL069W, YBL071W-A, YBL072C, YBL079W, YBL082C, YBL087C, YBL092W, YBL098W, YBR004C, YBR009C, YBR023C, YBR025C, YBR031W, YBR048W, YBR049C, YBR061C, YBR069C, YBR076W, YBR079C, YBR084C-A, YBR084W, YBR087W, YBR091C, YBR095C, YBR106W, YBR118W, YBR121C, YBR141C, YBR142W, YBR143C, YBR148W, YBR153W, YBR154C, YBR155W, YBR162W-A, YBR172C, YBR175W, YBR180W, YBR188C, YBR189W, YBR191W, YBR205W, YBR220C, YBR229C, YBR242W, YBR246W, YBR247C, YBR248C, YBR249C, YBR257W, YBR261C, YBR263W, YBR267W, YBR271W, YBR283C, YBR291C, YBR295W, YCL001W-B, YCL002C, YCL028W, YCL029C, Y

CL031C, YCL036W, YCL048W, YCL054W, YCL059C, YCR016W, YCR020C-A, YCR020W-B, YCR028C, YCR031C, YCR034W, YCR037C, YCR038C, YCR043C, YCR045C, YCR047C, YCR051W, YCR054C, YCR057C, YCR087C-A, YCR097W, YC
R106W, YCR107W, YDL030W, YDL031W, YDL036C, YDL037C, YDL038C, YDL039C, YDL042C, YDL051W, YDL060W, YDL061C, YDL063C, YDL064W, YDL066W, YDL075W, YDL081C, YDL082W, YDL083C, YDL084W, YDL089W, YDL090C,
YDL098C, YDL105W, YDL111C, YDL112W, YDL114W, YDL115C, YDL117W, YDL125C, YDL126C, YDL127W, YDL128W, YDL129W, YDL130W, YDL131W, YDL133C-A, YDL136W, YDL148C, YDL150W, YDL153C, YDL167C, YDL168W, YDL17
9W, YDL182W, YDL184C, YDL191W, YDL200C, YDL207W, YDL208W, YDL209C, YDL213C, YDL229W, YDL231C, YDR002W, YDR006C, YDR011W, YDR019C, YDR020C, YDR021W, YDR023W, YDR025W, YDR026C, YDR037W, YDR038C, YDR
039C, YDR040C, YDR042C, YDR052C, YDR065W, YDR083W, YDR087C, YDR091C, YDR098C, YDR101C, YDR110W, YDR119W, YDR120C, YDR121W, YDR126W, YDR135C, YDR144C, YDR146C, YDR147W, YDR148C, YDR156W, YDR159W, Y
DR161W, YDR162C, YDR165W, YDR172W, YDR184C, YDR207C, YDR211W, YDR214W, YDR217C, YDR222W, YDR224C, YDR225W, YDR234W, YDR240C, YDR243C, YDR245W, YDR249C, YDR257C, YDR268W, YDR280W, YDR285W, YDR299W,
YDR300C, YDR302W, YDR312W, YDR317W, YDR321W, YDR324C, YDR339C, YDR346C, YDR349C, YDR351W, YDR365C, YDR370C, YDR381W, YDR382W, YDR383C, YDR390C, YDR395W, YDR398W, YDR399W, YDR402C, YDR410C, YDR412
W, YDR416W, YDR418W, YDR420W, YDR429C, YDR432W, YDR446W, YDR447C, YDR450W, YDR458C, YDR471W, YDR473C, YDR478W, YDR479C, YDR492W, YDR496C, YDR499W, YDR500C, YDR514C, YDR523C, YDR527W, YEL003W, YEL0
18W, YEL025C, YEL026W, YEL036C, YEL040W, YEL042W, YEL046C, YEL054C, YEL055C, YER001W, YER002W, YER006W, YER007C-A, YER009W, YER019C-A, YER025W, YER028C, YER036C, YER044C-A, YER046W, YER049W, YER05
5C, YER056C, YER056C-A, YER060W-A, YER061C, YER062C, YER074W, YER076C, YER081W, YER082C, YER085C, YER102W, YER110C, YER117W, YER118C, YER126C, YER127W, YER131W, YER137C, YER138W-A, YER156C, YER165
W, YER184C, YFL001W, YFL002C, YFL012W, YFL022C, YFL023W, YFL025C, YFL029C, YFL034C-A, YFL045C, YFR001W, YFR028C, YFR031C-A, YFR032C-A, YFR038W, YGL016W, YGL022W, YGL029W, YGL030W, YGL031C, YGL032
C, YGL033W, YGL043W, YGL050W, YGL056C, YGL067W, YGL070C, YGL071W, YGL075C, YGL076C, YGL078C, YGL091C, YGL092W, YGL099W, YGL103W, YGL111W, YGL114W, YGL116W, YGL119W, YGL120C, YGL123W, YGL139W, YGL1
47C, YGL155W, YGL169W, YGL171W, YGL186C, YGL189C, YGL211W, YGL221C, YGL225W, YGL226C-A, YGL234W, YGL243W, YGR001C, YGR003W, YGR012W, YGR014W, YGR027C, YGR030C, YGR034W, YGR035C, YGR054W, YGR057C,
YGR059W, YGR061C, YGR063C, YGR078C, YGR079W, YGR081C, YGR085C, YGR090W, YGR093W, YGR103W, YGR120C, YGR121C, YGR123C, YGR124W, YGR128C, YGR140W, YGR144W, YGR145W, YGR146C, YGR147C, YGR148C, YGR152
C, YGR153W, YGR156W, YGR158C, YGR159C, YGR162W, YGR173W, YGR185C, YGR187C, YGR191W, YGR195W, YGR200C, YGR210C, YGR211W, YGR214W, YGR216C, YGR217W, YGR233C, YGR239C, YGR245C, YGR251W, YGR262C, YGR2
64C, YGR271C-A, YGR272C, YGR274C, YGR276C, YGR280C, YGR283C, YGR285C, YHL001W, YHL003C, YHL007C, YHL011C, YHL013C, YHL015W, YHL033C, YHL039W, YHR003C, YHR010W, YHR013C, YHR019C, YHR020W, YHR021C,
YHR021W-A, YHR025W, YHR031C, YHR032W, YHR049W, YHR052W, YHR062C, YHR064C, YHR065C, YHR066W, YHR069C, YHR070W, YHR072W-A, YHR081W, YHR088W, YHR089C, YHR100C, YHR120W, YHR122W, YHR126C, YHR127W, YHR
128W, YHR141C, YHR143W-A, YHR148W, YHR149C, YHR150W, YHR163W, YHR169W, YHR170W, YHR175W, YHR182W, YHR192W, YHR197W, YHR203C, YHR204W, YHR205W, YHR206W, YIL003W, YIL004C, YIL008W, YIL016W, YIL021W, YIL
037C, YIL052C, YIL056W, YIL061C, YIL064W, YIL068C, YIL069C, YIL078W, YIL094C, YIL096C, YIL103W, YIL110W, YIL118W, YIL126W, YIL127C, YIL128W, YIL130W, YIL131C, YIL132C, YIL133C, YIL147C, YIL148
W, YIL150C, YIL159W, YIR012W, YIR013C, YIR026C, YJL002C, YJL010C, YJL011C, YJL035C, YJL039C, YJL050W, YJL054W, YJL074C, YJL087C, YJL098W, YJL111W, YJL122W, YJL125C, YJL130C, YJL147C, YJL160C, YJL1
67W, YJL177W, YJL178C, YJL183W, YJL186W, YJL189W, YJL190C, YJL191W, YJL192C, YJL200C, YJL204C, YJL208C, YJL217W, YJR002W, YJR003C, YJR007W, YJR014W, YJR015W, YJR022W, YJR041C, YJR042W, YJR046W, YJ
R055W, YJR057W, YJR062C, YJR063W, YJR064W, YJR067C, YJR069C, YJR075W, YJR091C, YJR094W-A, YJR097W, YJR105W, YJR108W, YJR109C, YJR123W, YJR129C, YJR132W, YJR133W, YJR136C, YJR145C, YKL006W, YKL009
W, YKL014C, YKL018W, YKL022C, YKL039W, YKL045W, YKL050C, YKL056C, YKL074C, YKL075C, YKL077W, YKL078W, YKL079W, YKL081W, YKL082C, YKL086W, YKL087C, YKL088W, YKL090W, YKL091C, YKL093W, YKL094W, YKL0
98W, YKL099C, YKL101W, YKL114C, YKL120W, YKL125W, YKL135C, YKL143W, YKL144C, YKL156W, YKL166C, YKL168C, YKL172W, YKL173W, YKL174C, YKL175W, YKL179C, YKL180W, YKL181W, YKL183W, YKL184W, YKL185W, YK
L186C, YKL187C, YKL188C, YKL197C, YKL205W, YKL216W, YKL220C, YKL222C, YKR009C, YKR015C, YKR021W, YKR022C, YKR025W, YKR026C, YKR038C, YKR039W, YKR043C, YKR044W, YKR045C, YKR052C, YKR054C, YKR055W, YKR056W,
YKR057W, YKR058W, YKR061W, YKR063C, YKR068C, YKR079C, YKR080W, YKR081C, YKR086W, YKR087C, YKR090W, YKR092C, YKR105C, YLL005C, YLL008W, YLL011W, YLL014W, YLL027W, YLL028W, YLL029W, YLL031
C, YLL032C, YLL033W, YLL034C, YLL035W, YLL040C, YLL042C, YLL045C, YLL046C, YLL048C, YLL049W, YLL052C, YLL057C, YLR002C, YLR003C, YLR004C, YLR007W, YLR008C, YLR009W, YLR012C, YLR014C, YLR015W, YLR0
17W, YLR018C, YLR020C, YLR021W, YLR027C, YLR029C, YLR031W, YLR039C, YLR048W, YLR051C, YLR055C, YLR058C, YLR060W, YLR061W, YLR063W, YLR068W, YLR073C, YLR074C, YLR075W, YLR083C, YLR106C, YLR107W, YL
R115W, YLR116W, YLR117C, YLR129W, YLR136C, YLR137W, YLR138W, YLR143W, YLR148W, YLR149C, YLR153C, YLR154C, YLR167W, YLR172C, YLR175W, YLR180W, YLR185W, YLR186W, YLR192C, YLR196W, YLR197W, YLR212C,
YLR221C, YLR222C, YLR224W, YLR229C, YLR234W, YLR244C, YLR249W, YLR262C-A, YLR264W, YLR275W, YLR276C, YLR277C, YLR278C, YLR287C, YLR287C-A, YLR288C, YLR291C, YLR293C, YLR316C, YLR319C, YLR321C, YLR
323C, YLR325C, YLR333C, YLR335W, YLR336C, YLR340W, YLR341W, YLR342W, YLR344W, YLR359W, YLR363W-A, YLR367W, YLR384C, YLR385C, YLR388W, YLR397C, YLR398C, YLR401C, YLR405W, YLR406C, YLR409C, YLR419W,
YLR420W, YLR424W, YLR430W, YLR432W, YLR435W, YLR441C, YLR443W, YLR448W, YLR449W, YML006C, YML014W, YML017W, YML019W, YML022W, YML023C, YML024W, YML026C, YML043C, YML056C, YML060W, YML061C, YML063
W, YML065W, YML066C, YML068W, YML071C, YML073C, YML074C, YML080W, YML086C, YML093W, YML094W, YML095C, YML096W, YML097C, YML099C, YML106W, YML108W, YML116W, YML125C, YML126C, YMR005W, YMR013C, YMR0
13W-A, YMR014W, YMR016C, YMR017W, YMR026C, YMR033W, YMR034C, YMR036C, YMR039C, YMR049C, YMR059W, YMR069W, YMR077C, YMR095C, YMR096W, YMR106C, YMR116C, YMR120C, YMR121C, YMR123W, YMR127C, YMR128W,
YMR129W, YMR131C, YMR132C, YMR138W, YMR142C, YMR143W, YMR144W, YMR146C, YMR185W, YMR187C, YMR189W, YMR194W, YMR209C, YMR211W, YMR217W, YMR220W, YMR221C, YMR223W, YMR229C, YMR230W, YMR235C, YMR241
W, YMR242C, YMR243C, YMR244W, YMR259C, YMR260C, YMR268C, YMR269W, YMR283C, YMR292W, YMR296C, YMR300C, YMR301C, YMR308C, YMR309C, YMR310C, YMR312W, YMR318C, YMR321C, YNL002C, YNL022C, YNL023C, YNL0
29C, YNL035C, YNL036W, YNL038W, YNL047C, YNL048W, YNL049C, YNL053W, YNL061W, YNL064C, YNL067W, YNL069C, YNL072W, YNL075W, YNL078W, YNL087W, YNL088W, YNL095C, YNL096C, YNL099C, YNL107W, YNL108C, YN
L110C, YNL112W, YNL113W, YNL119W, YNL123W, YNL124W, YNL132W, YNL141W, YNL151C, YNL153C, YNL162W, YNL162W-A, YNL163C, YNL164C, YNL165W, YNL172W, YNL175C, YNL178W, YNL181W, YNL182C, YNL186W, YNL207
W, YNL209W, YNL217W, YNL220W, YNL221C, YNL227C, YNL229C, YNL232W, YNL240C, YNL244C, YNL245C, YNL247W, YNL248C, YNL255C, YNL256W, YNL260C, YNL261W, YNL262W, YNL268W, YNL292W, YNL299W, YNL301C, YNL3
02C, YNL307C, YNL311C, YNL313C, YNL323W, YNL325C, YNL329C, YNR003C, YNR004W, YNR012W, YNR015W, YNR038W, YNR043W, YNR044W, YNR046W, YNR050C, YNR051C, YNR053C, YOL010W, YOL019W, YOL021C, YOL022C, YO
L034W, YOL039W, YOL040C, YOL041C, YOL044W, YOL051W, YOL052C, YOL054W, YOL061W, YOL077C, YOL089C, YOL092W, YOL093W, YOL103W, YOL120C, YOL121C, YOL123W, YOL124C, YOL125W, YOL127W, YOL128C, YOL130W,
YOL139C, YOL141W, YOL142W, YOL144W, YOR001W, YOR004W, YOR006C, YOR016C, YOR021C, YOR046C, YOR048C, YOR049C, YOR063W, YOR078W, YOR091W, YOR094W, YOR095C, YOR096W, YOR098C, YOR101W, YOR116C, YOR119
C, YOR126C, YOR127W, YOR128C, YOR134W, YOR145C, YOR153W, YOR159C, YOR167C, YOR168W, YOR182C, YOR184W, YOR188W, YOR198C, YOR201C, YOR202W, YOR204W, YOR206W, YOR207C, YOR213C, YOR217W, YOR224C, YOR2
29W, YOR233W, YOR234C, YOR236W, YOR241W, YOR243C, YOR246C, YOR252W, YOR253W, YOR260W, YOR262W, YOR264W, YOR271C, YOR272W, YOR274W, YOR276W, YOR293W, YOR294W, YOR295W, YOR302W, YOR303W, YOR304C-A,
YOR305W, YOR307C, YOR308C, YOR310C, YOR312C, YOR315W, YOR327C, YOR335C, YOR338W, YOR339C, YOR340C, YOR341W, YOR342C, YOR346W, YOR348C, YOR350C, YOR361C, YOR367W, YOR370C, YOR388C, YOR389W, YOR390
W, YPL011C, YPL032C, YPL048W, YPL050C, YPL052W, YPL054W, YPL055C, YPL057C, YPL064C, YPL078C, YPL081W, YPL087W, YPL108W, YPL115C, YPL118W, YPL119C, YPL131W, YPL132W, YPL139C, YPL151C, YPL156C, YPL1
58C, YPL159C, YPL166W, YPL170W, YPL172C, YPL209C, YPL211W, YPL217C, YPL218W, YPL219W, YPL223C, YPL226W, YPL232W, YPL241C, YPL249C, YPL252C, YPL255W, YPL257W, YPL259C, YPL264C, YPL269W, YPL273W, YP
R004C, YPR005C, YPR007C, YPR011C, YPR015C, YPR016C, YPR017C, YPR018W, YPR021C, YPR029C, YPR035W, YPR036W, YPR046W, YPR048W, YPR049C, YPR058W, YPR060C, YPR069C, YPR071W, YPR074C, YPR080W, YPR082C,
YPR102C, YPR104C, YPR110C, YPR112C, YPR118W, YPR125W, YPR132W, YPR143W, YPR144C, YPR145W, YPR153W, YPR163C, YPR169W, YPR187W,

Genes belonging to Cluster 2 :-->

Q0045, Q0050, Q0055, Q0065, Q0075, Q0080, Q0105, Q0115, Q0120, Q0140, Q0160, Q0250, Q0275, YAL001C, YAL002W, YAL008W, YAL009W, YAL010C, YAL011W, YAL013W, YAL014C, YAL016W, YAL017W, YAL021C, YAL027
W, YAL028W, YAL030W, YAL031C, YAL032C, YAL034C, YAL040C, YAL044W-A, YAL054C, YAL055W, YAL060W, YAL061W, YAL062W, YAL064C-A, YAL064W, YAL064W-B, YAL067C, YAR019C, YAR023C, YAR027W, YAR035W, YAR050
W, YBL001C, YBL006C, YBL007C, YBL019W, YBL022C, YBL026W, YBL031W, YBL032W, YBL037W, YBL041W, YBL046W, YBL049W, YBL050W, YBL055C, YBL068W, YBL074C, YBL075C, YBL078C, YBL080C, YBL084C, YBL085W, YBL0
89W, YBL091C, YBL091C-A, YBL101C, YBL102W, YBR001C, YBR006W, YBR007C, YBR008C, YBR013C, YBR014C, YBR017C, YBR020W, YBR021W, YBR024W, YBR026C, YBR036C, YBR046C, YBR050C, YBR052C, YBR053C, YBR054W,
YBR056W, YBR058C, YBR062C, YBR072W, YBR078W, YBR080C, YBR085C-A, YBR089C-A, YBR090C, YBR093C, YBR098W, YBR103W, YBR108W, YBR111C, YBR112C, YBR114W, YBR117C, YBR125C, YBR126C, YBR128C, YBR132C, YBR
139W, YBR147W, YBR149W, YBR150C, YBR157C, YBR159W, YBR165W, YBR167C, YBR168W, YBR169C, YBR170C, YBR173C, YBR176W, YBR193C, YBR203W, YBR211C, YBR214W, YBR216C, YBR217W, YBR221C, YBR223C, YBR225W, Y
BR228W, YBR235W, YBR236C, YBR237W, YBR240C, YBR241C, YBR260C, YBR270C, YBR273C, YBR274W, YBR278W, YBR280C, YBR281C, YBR284W, YBR285W, YBR287W, YBR288C, YBR290W, YBR294W, YBR297W, YBR298C, YBR299W,
YBR302C, YCL004W, YCL008C, YCL011C, YCL016C, YCL027W, YCL032W, YCL033C, YCL035C, YCL039W, YCL040W, YCL042W, YCL047C, YCL049C, YCL051W, YCL052C, YCL056C, YCL064C, YCL066W, YCL067C, YCR007C, YCR009
C, YCR010C, YCR011C, YCR019W, YCR020C, YCR021C, YCR027C, YCR030C, YCR032W, YCR039C, YCR040W, YCR044C, YCR066W, YCR076C, YCR077C, YCR079W, YCR089W, YCR090C, YCR091W, YCR093W, YCR096C, YCR099C, YDL0
05C, YDL007W, YDL019C, YDL020C, YDL021W, YDL029W, YDL033C, YDL035C, YDL045C, YDL048C, YDL052C, YDL053C, YDL059C, YDL072C, YDL076C, YDL079C, YDL100C, YDL106C, YDL113C, YDL120W, YDL121C, YDL122W, YD
L123W, YDL124W, YDL137W, YDL142C, YDL146W, YDL147W, YDL149W, YDL159W-A, YDL169C, YDL170W, YDL176W, YDL188C, YDL190C, YDL193W, YDL194W, YDL206W, YDL215C, YDL217C, YDL219W, YDL220C, YDL223C, YDL225
W, YDL232W, YDL233W, YDL234C, YDL237W, YDL238C, YDL239C, YDL240W, YDL243C, YDL245C, YDR001C, YDR003W, YDR005C, YDR007W, YDR009W, YDR012W, YDR018C, YDR027C, YDR028C, YDR032C, YDR033W, YDR034W-B, YD
R049W, YDR051C, YDR056C, YDR057W, YDR059C, YDR060W, YDR063W, YDR068W, YDR069C, YDR070C, YDR071C, YDR074W, YDR078C, YDR082W, YDR084C, YDR085C, YDR088C, YDR089W, YDR096W, YDR100W, YDR105C, YDR106W,
YDR107C, YDR108W, YDR117C, YDR118W, YDR122W, YDR130C, YDR155C, YDR160W, YDR166C, YDR168W, YDR171W, YDR173C, YDR175C, YDR176W, YDR177W, YDR186C, YDR188W, YDR195W, YDR196C, YDR201W, YDR202C, YDR204
W, YDR205W, YDR218C, YDR219C, YDR223W, YDR226W, YDR227W, YDR231C, YDR236C, YDR242W, YDR247W, YDR248C, YDR253C, YDR255C, YDR256C, YDR258C, YDR262W, YDR263C, YDR264C, YDR265W, YDR266C, YDR272W, YDR2

75W, YDR287W, YDR288W, YDR289C, YDR293C, YDR304C, YDR307W, YDR311W, YDR328C, YDR329C, YDR330W, YDR332W, YDR334W, YDR336W, YDR338C, YDR341C, YDR342C, YDR343C, YDR345C, YDR354W, YDR356W, YDR358W, YD R379C-A, YDR386W, YDR387C, YDR388W, YDR397C, YDR403W, YDR406W, YDR411C, YDR415C, YDR421W, YDR422C, YDR423C, YDR425W, YDR434W, YDR435C, YDR436W, YDR437W, YDR438W, YDR439W, YDR448W, YDR462W, YDR468 C, YDR475C, YDR480W, YDR484W, YDR485C, YDR486C, YDR490C, YDR495C, YDR515W, YDR516C, YDR517W, YDR525W-A, YDR530C, YDR539W, YEL004W, YEL006W, YEL011W, YEL012W, YEL016C, YEL017W, YEL023C, YEL027W, YE L041W, YEL053C, YEL060C, YEL069C, YEL070W, YEL072W, YER007W, YER008C, YER012W, YER016W, YER018C, YER024W, YER027C, YER029C, YER033C, YER035W, YER037W, YER045C, YER054C, YER059W, YER065C, YER066W, YER067W, YER071C, YER079W, YER083C, YER088C, YER093C, YER098W, YER103W, YER109C, YER116C, YER125W, YER134C, YER136W, YER142C, YER146W, YER150W, YER152C, YER163C, YER177W, YER179W, YER186C, YFL005 W, YFL009W, YFL011W, YFL017W-A, YFL024C, YFL026W, YFL027C, YFL033C, YFL042C, YFL044C, YFL048C, YFL049W, YFL052W, YFL054C, YFL055W, YFL062W, YFR006W, YFR008W, YFR010W, YFR013W, YFR014C, YFR016C, YF R017C, YFR018C, YFR019W, YFR021W, YFR023W, YFR030W, YFR031C, YFR032C, YFR033C, YFR037C, YFR040W, YFR046C, YFR048W, YFR051C, YFR053C, YFR057W, YGL002W, YGL004C, YGL005C, YGL006W, YGL010W, YGL018C, YGL019W, YGL020C, YGL025C, YGL026C, YGL028C, YGL036W, YGL037C, YGL049C, YGL053W, YGL059W, YGL080W, YGL082W, YGL084C, YGL087C, YGL096W, YGL098W, YGL108C, YGL121C, YGL124C, YGL128C, YGL129C, YGL134 W, YGL136C, YGL137W, YGL141W, YGL142C, YGL151W, YGL154C, YGL161C, YGL164C, YGL170C, YGL174W, YGL180W, YGL181W, YGL184C, YGL185C, YGL190C, YGL194C, YGL197W, YGL198W, YGL206C, YGL212W, YGL216W, YGL2 27W, YGL228W, YGL229C, YGL230C, YGL232W, YGL250W, YGL252C, YGL258W, YGR005C, YGR006W, YGR007W, YGR008C, YGR009C, YGR019W, YGR023W, YGR032W, YGR043C, YGR044C, YGR045C, YGR052W, YGR067C, YGR070W, YG R075C, YGR077C, YGR089W, YGR094W, YGR111W, YGR117C, YGR118W, YGR122W, YGR127W, YGR130C, YGR138C, YGR141W, YGR142W, YGR143W, YGR154C, YGR163W, YGR167W, YGR174C, YGR179C, YGR186W, YGR193C, YGR194C, YGR197C, YGR201C, YGR203W, YGR205W, YGR223C, YGR236C, YGR237C, YGR238C, YGR241C, YGR243W, YGR246C, YGR252W, YGR253C, YGR255C, YGR256W, YGR258C, YGR263C, YGR270W, YGR273C, YGR277C, YGR281W, YGR284 C, YGR286C, YGR287C, YGR288W, YGR289C, YGR292W, YGR295C, YHL008C, YHL018W, YHL021C, YHL025W, YHL028W, YHL030W, YHL036W, YHL044W, YHL048W, YHR004C, YHR009C, YHR012W, YHR016C, YHR027C, YHR028C, YHR0 43C, YHR044C, YHR053C, YHR055C, YHR057C, YHR061C, YHR075C, YHR078W, YHR082C, YHR087W, YHR090C, YHR092C, YHR096C, YHR097C, YHR098C, YHR101C, YHR104W, YHR105W, YHR111W, YHR112C, YHR113W, YHR115C, YH R118C, YHR131C, YHR134W, YHR138C, YHR139C, YHR140W, YHR146W, YHR152W, YHR157W, YHR158C, YHR159W, YHR161C, YHR164C, YHR166C, YHR171W, YHR176W, YHR177W, YHR189W, YHR191C, YHR199C, YHR209W, YHR211W, YIL001W, YIL017C, YIL024C, YIL027C, YIL030C, YIL031W, YIL041W, YIL055C, YIL057C, YIL063C, YIL071C, YIL087C, YIL089W, YIL095W, YIL097W, YIL101C, YIL105C, YIL107C, YIL108W, YIL113W, YIL119C, YIL120 W, YIL121W, YIL124W, YIL135C, YIL136W, YIL151C, YIL154C, YIL156W, YIL162W, YIL164C, YIR001C, YIR003W, YIR005W, YIR011C, YIR016W, YIR017C, YIR028W, YIR032C, YIR038C, YJL003W, YJL004C, YJL005W, YJL0 16W, YJL020C, YJL024C, YJL036W, YJL042W, YJL053W, YJL055W, YJL056C, YJL057C, YJL059W, YJL078C, YJL082W, YJL083W, YJL089W, YJL096W, YJL099W, YJL102W, YJL106W, YJL126W, YJL132W, YJL134W, YJ L141C, YJL146W, YJL151C, YJL154C, YJL159W, YJL163C, YJL164C, YJL212C, YJL213W, YJL219W, YJR001W, YJR008W, YJR010W, YJR013W, YJR021C, YJR033C, YJR035W, YJR039W, YJR044C, YJR052W, YJR058C, YJR059W, YJR065C, YJR082C, YJR089W, YJR090C, YJR093C, YJR096W, YJR119C, YJR122W, YJR126C, YJR127C, YJR137C, YJR142W, YJR149W, YJR152W, YJR158W, YKL001C, YKL002W, YKL004W, YKL019W, YKL021C, YKL026C, YKL035 W, YKL061W, YKL064W, YKL065C, YKL092C, YKL100C, YKL103C, YKL105C, YKL119C, YKL127W, YKL129C, YKL132C, YKL141W, YKL151C, YKL160W, YKL163W, YKL171W, YKL189W, YKL193C, YKL206C, YKL208W, YKL210W, YKL2 13C, YKR003W, YKR016W, YKR020W, YKR027W, YKR031C, YKR036C, YKR042W, YKR049C, YKR070W, YKR074W, YKR075C, YKR076W, YKR078W, YKR083C, YKR088C, YKR095W, YKR096W, YKR097W, YKR098C, YLL015W, YLL023C, YL L026W, YLL038C, YLL053C, YLL054C, YLL055W, YLL060C, YLL062C, YLR001C, YLR006C, YLR011W, YLR022C, YLR024C, YLR025W, YLR028C, YLR033W, YLR035C, YLR036C, YLR045C, YLR053C, YLR064W, YLR069C, YLR071C, YLR078C, YLR080W, YLR081W, YLR082C, YLR093C, YLR120C, YLR125W, YLR127C, YLR128W, YLR130C, YLR135W, YLR151C, YLR156W, YLR159W, YLR161W, YLR164W, YLR166C, YLR174W, YLR177W, YLR178C, YLR182W, YLR189 C, YLR199C, YLR201C, YLR207W, YLR209C, YLR219W, YLR225C, YLR233C, YLR237W, YLR241W, YLR246W, YLR247C, YLR251W, YLR254C, YLR258W, YLR262C, YLR263W, YLR270W, YLR271W, YLR284C, YLR290C, YLR303W, YLR3 05C, YLR306W, YLR307W, YLR309C, YLR327C, YLR345W, YLR346C, YLR352W, YLR353W, YLR356W, YLR362W, YLR368W, YLR370C, YLR373C, YLR377C, YLR392C, YLR396C, YLR399C, YLR408C, YLR421C, YLR433C, YLR436C, YL R446W, YLR450W, YLR452C, YLR455W, YLR456W, YML001W, YML005W, YML007W, YML011C, YML012W, YML020W, YML032C, YML034W, YML036W, YML037C, YML064C, YML070W, YML079W, YML100W, YML101C, YML117W, YML118W, YML128C, YML132W, YMR008C, YMR011W, YMR018W, YMR022W, YMR023C, YMR025W, YMR030W, YMR031C, YMR040W, YMR053C, YMR065W, YMR066W, YMR067C, YMR071C, YMR081C, YMR084W, YMR085W, YMR086W, YMR087W, YMR088 C, YMR090W, YMR101C, YMR104C, YMR105C, YMR107W, YMR109W, YMR113W, YMR119W, YMR124W, YMR126C, YMR137C, YMR139W, YMR140W, YMR148W, YMR154C, YMR156C, YMR159C, YMR160W, YMR164C, YMR169C, YMR170C, YMR1 71C, YMR174C, YMR175W, YMR176W, YMR178W, YMR180C, YMR181C, YMR184W, YMR192W, YMR196W, YMR204C, YMR206W, YMR216C, YMR219W, YMR237W, YMR250W, YMR261C, YMR262W, YMR264W, YMR266W, YMR271C, YMR272C, YM R279C, YMR284W, YMR289W, YMR290C, YMR291W, YMR297W, YMR299C, YMR304W, YMR311C, YMR313C, YMR315W, YMR323W, YNL003C, YNL007C, YNL008C, YNL011C, YNL025C, YNL033W, YNL039W, YNL041C, YNL045W, YNL062C, YNL084C, YNL092W, YNL093W, YNL097C, YNL106C, YNL115C, YNL117W, YNL125C, YNL127W, YNL144C, YNL145W, YNL157W, YNL159C, YNL160W, YNL167C, YNL193W, YNL194C, YNL195C, YNL197C, YNL200C, YNL204C, YNL211 C, YNL215W, YNL223W, YNL225C, YNL236W, YNL243W, YNL249C, YNL251C, YNL254C, YNL258C, YNL259C, YNL265C, YNL277W, YNL291C, YNL293W, YNL294C, YNL305C, YNL321W, YNL335W, YNL336W, YNR001C, YNR002C, YNR0 13C, YNR014W, YNR021W, YNR024W, YNR029C, YNR032C-A, YNR034W, YNR034W-A, YNR056C, YNR059W, YNR060W, YNR072W, YNR073C, YOL001W, YOL009C, YOL013C, YOL016C, YOL018C, YOL024W, YOL026C, YOL043C, YOL047 C, YOL060C, YOL065C, YOL069W, YOL070C, YOL071W, YOL081W, YOL082W, YOL083W, YOL084W, YOL087C, YOL105C, YOL108C, YOL110W, YOL111C, YOL114C, YOL116W, YOL117W, YOL126C, YOL137W, YOL143C, YOL152W, YOL1 54W, YOL156W, YOL157C, YOL159C, YOL159C-A, YOL164W, YOR002W, YOR005C, YOR008C, YOR014W, YOR018W, YOR019W, YOR028C, YOR031W, YOR035C, YOR036W, YOR037W, YOR040W, YOR042W, YOR059C, YOR062C, YOR070C, YOR077W, YOR086C, YOR089C, YOR090C, YOR092W, YOR100C, YOR104W, YOR107W, YOR109W, YOR110W, YOR111W, YOR112W, YOR113W, YOR118W, YOR120W, YOR124C, YOR132W, YOR137C, YOR138C, YOR152C, YOR155C, YOR162 C, YOR164C, YOR173W, YOR176W, YOR177C, YOR178C, YOR180C, YOR186W, YOR193W, YOR208W, YOR214C, YOR219C, YOR220W, YOR223W, YOR227W, YOR228C, YOR238W, YOR244W, YOR256C, YOR257W, YOR258W, YOR259C, YOR2 61C, YOR267C, YOR270C, YOR275C, YOR289W, YOR291W, YOR292C, YOR297C, YOR298W, YOR329C, YOR347C, YOR349W, YOR351C, YOR353C, YOR357C, YOR371C, YOR373W, YOR380W, YOR381W, YOR382W, YOR384W, YPL006W, YP L007C, YPL024W, YPL028W, YPL033C, YPL040C, YPL047W, YPL056C, YPL059W, YPL060W, YPL061W, YPL065W, YPL067C, YPL068C, YPL071C, YPL086C, YPL089C, YPL094C, YPL096C-A, YPL100W, YPL101W, YPL107W, YPL111 W, YPL126W, YPL134C, YPL135W, YPL137C, YPL148C, YPL155C, YPL167C, YPL168W, YPL173W, YPL175W, YPL177C, YPL179W, YPL180W, YPL186C, YPL187W, YPL190C, YPL194W, YPL196W, YPL200W, YPL202C, YPL210C, YPL2 13W, YPL221W, YPL224C, YPL235W, YPL242C, YPL245W, YPL247C, YPL248C, YPL250C, YPL256C, YPL258C, YPL262W, YPL267W, YPL268W, YPR010C, YPR013C, YPR026W, YPR027C, YPR032W, YPR037C, YPR042C, YPR056W, YP R066W, YPR068C, YPR070W, YPR072W, YPR081C, YPR084W, YPR094W, YPR105C, YPR106W, YPR115W, YPR121W, YPR122W, YPR152C, YPR154W, YPR156C, YPR160W, YPR162C, YPR178W, YPR179C, YPR180W, YPR181C, YPR184W, YPR199C, YPR200C,

Genes belonging to Cluster 3 :-->

Q0060, Q0070, Q0085, Q0130, Q0255, YAL005C, YAL015C, YAL020C, YAL039C, YAL046C, YAL048C, YAL049C, YAL051W, YAL056W, YAL063C, YAR066W, YBL008W, YBL015W, YBL016W, YBL021C, YBL029C-A, YBL030C, YBL038 W, YBL043W, YBL044W, YBL045C, YBL058W, YBL059C-A, YBL059W, YBL060W, YBL064C, YBL066C, YBL086C, YBL090W, YBL095W, YBL099W, YBL107C, YBR003W, YBR010W, YBR016W, YBR018C, YBR019C, YBR033W, YBR037C, YB R039W, YBR044C, YBR047W, YBR068C, YBR083W, YBR094W, YBR096W, YBR105C, YBR107C, YBR110W, YBR120C, YBR122C, YBR137W, YBR146W, YBR151W, YBR177C, YBR179C, YBR183W, YBR184W, YBR185C, YBR186W, YBR192W, YBR194W, YBR204C, YBR207W, YBR222C, YBR230C, YBR244W, YBR251W, YBR255C-A, YBR258C, YBR262C, YBR268W, YBR269C, YBR272C, YBR276C, YBR282W, YBR296C, YCL017C, YCL026C-B, YCL034W, YCL043C, YCL044C, YCL 057C-A, YCL058C, YCR003W, YCR008W, YCR024C, YCR036W, YCR046C, YCR060W, YCR061W, YCR071C, YCR075C, YCR083W, YCR100C, YDL002C, YDL004W, YDL008W, YDL018C, YDL022W, YDL025C, YDL027C, YDL028C, YDL045W- A, YDL046W, YDL049C, YDL057W, YDL067C, YDL069C, YDL070W, YDL078C, YDL086W, YDL087C, YDL088C, YDL091C, YDL097C, YDL104C, YDL107W, YDL108W, YDL109C, YDL110C, YDL119C, YDL130W-A, YDL132W, YDL138W, YD L143W, YDL144C, YDL154W, YDL159W, YDL161W, YDL165W, YDL174C, YDL175C, YDL178W, YDL180W, YDL181W, YDL183C, YDL199C, YDL201W, YDL202W, YDL203C, YDL204W, YDL205C, YDL214C, YDL216C, YDL218W, YDL222C, YDL235C, YDL244W, YDL246C, YDR004W, YDR030C, YDR031W, YDR035W, YDR036C, YDR041W, YDR045C, YDR046C, YDR047W, YDR058C, YDR061W, YDR066C, YDR072C, YDR073W, YDR079W, YDR099W, YDR104C, YDR115W, YDR116 C, YDR125C, YDR129C, YDR131C, YDR137W, YDR139C, YDR140W, YDR141C, YDR142C, YDR143C, YDR150W, YDR151C, YDR152W, YDR153C, YDR169C, YDR178W, YDR185C, YDR194C, YDR197W, YDR208W, YDR212W, YDR216W, YDR2 29W, YDR237W, YDR244W, YDR246W, YDR251W, YDR270W, YDR276C, YDR277C, YDR281C, YDR282C, YDR294C, YDR296W, YDR298C, YDR306C, YDR308C, YDR313C, YDR316W, YDR319C, YDR320C, YDR322C-A, YDR322W, YDR337W, YDR373W, YDR375C, YDR377W, YDR380W, YDR381C-A, YDR393W, YDR404C, YDR405W, YDR427W, YDR430C, YDR451C, YDR470C, YDR493W, YDR494W, YDR505C, YDR506C, YDR511W, YDR512C, YDR513W, YDR524C, YDR529C, YDR53 3C, YDR534C, YDR536W, YDR538W, YEL005C, YEL007W, YEL017C-A, YEL020C, YEL020W-A, YEL021W, YEL024W, YEL030W, YEL034W, YEL035C, YEL038W, YEL039C, YEL044W, YEL050C, YEL052W, YEL056W, YEL057C, YEL062W, YEL065W, YER004W, YER015W, YER017C, YER020W, YER021W, YER039C, YER039C-A, YER047C, YER048C, YER050C, YER053C, YER053C-A, YER058W, YER077C, YER078C, YER080W, YER087W, YER093C-A, YER094C, YER096W, Y ER107C, YER119C, YER141W, YER143W, YER144C, YER145C, YER154W, YER162C, YER170W, YER182W, YER183C, YFL007W, YFL013C, YFL014W, YFL016C, YFL018C, YFL030W, YFL036W, YFL041W, YFL046W, YFL053W, YFL058W, YFL059W, YFL060C, YFL061W, YFR003C, YFR004W, YFR007W, YFR011C, YFR034C, YFR042W, YFR043C, YFR044C, YFR045W, YFR049W, YFR050C, YFR052W, YGL011C, YGL013C, YGL040C, YGL045W, YGL047W, YGL048C, YGL055 W, YGL057C, YGL058W, YGL062W, YGL064C, YGL068W, YGL100W, YGL101W, YGL107C, YGL122C, YGL126W, YGL143C, YGL146C, YGL160W, YGL166W, YGL172W, YGL187C, YGL191W, YGL192W, YGL196W, YGL205W, YGL208W, YGL2 26W, YGL236C, YGL237C, YGL248W, YGL251C, YGL254W, YGR002C, YGR010W, YGR021W, YGR026W, YGR028W, YGR031W, YGR033C, YGR037C, YGR038W, YGR040W, YGR048W, YGR053C, YGR055W, YGR058W, YGR062C, YGR065C, YG R076C, YGR080W, YGR082W, YGR084C, YGR086C, YGR087C, YGR088W, YGR091W, YGR101W, YGR110W, YGR112W, YGR132C, YGR149W, YGR150C, YGR165W, YGR169C, YGR171C, YGR181W, YGR183C, YGR207C, YGR209C, YGR215W, YGR220C, YGR227W, YGR229C, YGR230W, YGR231C, YGR232W, YGR234W, YGR235C, YGR244C, YGR247W, YGR248W, YGR249W, YGR250C, YGR257C, YGR266W, YHL004W, YHL014C, YHL016C, YHL024W, YHL031C, YHL032C, YHL035 C, YHL038C, YHL040C, YHR001W, YHR001W-A, YHR002W, YHR005C-A, YHR008C, YHR011W, YHR015W, YHR017W, YHR024C, YHR037W, YHR038W, YHR050W, YHR051W, YHR054C, YHR056C, YHR059W, YHR076W, YHR080C, YHR083W,

YHR091C, YHR103W, YHR106W, YHR109W, YHR116W, YHR117W, YHR121W, YHR132W-A, YHR137W, YHR147C, YHR156C, YHR160C, YHR168W, YHR183W, YHR185C, YHR198C, YHR200W, YHR202W, YHR214W, YIL005W, YIL007C, YIL020C, YIL022W, YIL023C, YIL039W, YIL042C, YIL044C, YIL045W, YIL049W, YIL050W, YIL065C, YIL070C, YIL073C, YIL075C, YIL077C, YIL088C, YIL093C, YIL098C, YIL099W, YIL117C, YIL122W, YIL125W, YIL134W, YIL137C, YIL146C, YIL152W, YIL153W, YIL155C, YIL157C, YIL166C, YIL172C, YIR002C, YIR014W, YIR019C, YIR021W, YIR024C, YIR029W, YIR030C, YIR035C, YIR036C, YIR039C, YJL001W, YJL008C, YJL014W, YJL023C, YJL031C, YJL048C, YJL062W-A, YJL063C, YJL093C, YJL100W, YJL101C, YJL103C, YJL104W, YJL107C, YJL108C, YJL112W, YJL118W, YJL124C, YJL131C, YJL143W, YJL155C, YJL158C, YJL165C, YJL166W, YJL180C, YJL198W, YJL205C, YJL214W, YJL216C, YJL221C, YJR019C, YJR034W, YJR036C, YJR045C, YJR048W, YJR049C, YJR061W, YJR077C, YJR080C, YJR085C, YJR086W, YJR098C, YJR099W, YJR100C, YJR101W, YJR103W, YJR104C, YJR113C, YJR121W, YJR135W-A, YJR140C, YJR141W, YJR144W, YJR148W, YJR155W, YJR156C, YJR159W, YKL003C, YKL005C, YKL006C-A, YKL013C, YKL016C, YKL020C, YKL038W, YKL043W, YKL051W, YKL052C, YKL053C-A, YKL054C, YKL055C, YKL067W, YKL070W, YKL084W, YKL085W, YKL095W, YKL096W-A, YKL104C, YKL106C-A, YKL109W, YKL117W, YKL121W, YKL126W, YKL133C, YKL134C, YKL137W, YKL142W, YKL145W, YKL146W, YKL148C, YKL149C, YKL150W, YKL155C, YKL157W, YKL159C, YKL161C, YKL167C, YKL170W, YKL191W, YKL192C, YKL195W, YKL214C, YKL215C, YKL217W, YKL218C, YKR002W, YKR005C, YKR006C, YKR007W, YKR008W, YKR013W, YKR014C, YKR017C, YKR018C, YKR019C, YKR028W, YKR030W, YKR046C, YKR048C, YKR050W, YKR051W, YKR062W, YKR065C, YKR067W, YKR085C, YKR102W, YKR103W, YKR104W, YLL006W, YLL007C, YLL009C, YLL010C, YLL013C, YLL018C-A, YLL019C, YLL024C, YLL039C, YLL041C, YLL051C, YLL061W, YLR030W, YLR038C, YLR042C, YLR044C, YLR046C, YLR067C, YLR070C, YLR089C, YLR090W, YLR096W, YLR097C, YLR098C, YLR108C, YLR109W, YLR110C, YLR113W, YLR126C, YLR134W, YLR139C, YLR141W, YLR142W, YLR144C, YLR152C, YLR162W, YLR163C, YLR165C, YLR168C, YLR191W, YLR193C, YLR203C, YLR204W, YLR205C, YLR211C, YLR213C, YLR214W, YLR215C, YLR216C, YLR218C, YLR231C, YLR239C, YLR253W, YLR257W, YLR259C, YLR260W, YLR267W, YLR281C, YLR283W, YLR289W, YLR295C, YLR299W, YLR304C, YLR312C, YLR312W-A, YLR324W, YLR326W, YLR328W, YLR332W, YLR350W, YLR354C, YLR364W, YLR369W, YLR375W, YLR382C, YLR387C, YLR390W, YLR390W-A, YLR393W, YLR394W, YLR395C, YLR411W, YLR438W, YLR439W, YLR454W, YML004C, YML007C-A, YML009C, YML016C, YML025C, YML028W, YML030W, YML035C, YML042W, YML050W, YML052W, YML054C, YML057W, YML075C, YML076C, YML078W, YML081C-A, YML087C, YML091C, YML092C, YML115C, YML120C, YMR002W, YMR003W, YMR009W, YMR012W, YMR024W, YMR029C, YMR035W, YMR041C, YMR054W, YMR056C, YMR058W, YMR060C, YMR064W, YMR070W, YMR089C, YMR092C, YMR097C, YMR098C, YMR099C, YMR100W, YMR110C, YMR112C, YMR114C, YMR115W, YMR133W, YMR135C, YMR136W, YMR145C, YMR150C, YMR152W, YMR155W, YMR157C, YMR158W, YMR165C, YMR166C, YMR167W, YMR173W, YMR186W, YMR188C, YMR191W, YMR193W, YMR197C, YMR203W, YMR210W, YMR222C, YMR224C, YMR225C, YMR226C, YMR228W, YMR233W, YMR251W, YMR251W-A, YMR253C, YMR255W, YMR256C, YMR257C, YMR258C, YMR265C, YMR267W, YMR276W, YMR280C, YMR281W, YMR282C, YMR286W, YMR287C, YMR293C, YMR294W, YMR302C, YMR322C, YNL005C, YNL006W, YNL009W, YNL012W, YNL014W, YNL015W, YNL026W, YNL030W, YNL031C, YNL037C, YNL051W, YNL052W, YNL055C, YNL063W, YNL070W, YNL073W, YNL081C, YNL083W, YNL098C, YNL100W, YNL121C, YNL122C, YNL131W, YNL135C, YNL137C, YNL146W, YNL149C, YNL155W, YNL156C, YNL168C, YNL173C, YNL177C, YNL183C, YNL185C, YNL202W, YNL213C, YNL214W, YNL231C, YNL234W, YNL237W, YNL241C, YNL242W, YNL252C, YNL253W, YNL269W, YNL270C, YNL274C, YNL275W, YNL284C, YNL295W, YNL306W, YNL314W, YNL315C, YNL318C, YNL330C, YNL332W, YNL333W, YNL334C, YNR006W, YNR007C, YNR008W, YNR016C, YNR017W, YNR018W, YNR019W, YNR020C, YNR022C, YNR030W, YNR032W, YNR033W, YNR036C, YNR040W, YNR041C, YNR045W, YNR052C, YNR061C, YOL008W, YOL023W, YOL025W, YOL027C, YOL028C, YOL029C, YOL032W, YOL033W, YOL036W, YOL038W, YOL042W, YOL048C, YOL052C-A, YOL053W, YOL062C, YOL064C, YOL072W, YOL073C, YOL077W-A, YOL088C, YOL096C, YOL100W, YOL109W, YOL113W, YOL122C, YOL133W, YOL135C, YOL151W, YOL158C, YOR003W, YOR017W, YOR020C, YOR023C, YOR027W, YOR045W, YOR052C, YOR054C, YOR064C, YOR065W, YOR068C, YOR084W, YOR093C, YOR097C, YOR117W, YOR122C, YOR131C, YOR136W, YOR142W, YOR147W, YOR150W, YOR154W, YOR158W, YOR161C, YOR163W, YOR171C, YOR172W, YOR187W, YOR196C, YOR205C, YOR211C, YOR215C, YOR221C, YOR232W, YOR245C, YOR250C, YOR266W, YOR273C, YOR286W, YOR288C, YOR296W, YOR298C-A, YOR313C, YOR317W, YOR328W, YOR358W, YOR359W, YOR365C, YOR372C, YOR383C, YOR386W, YOR387C, YOR391C, YOR393W, YOR394W, YPL005W, YPL010W, YPL013C, YPL016W, YPL017C, YPL021W, YPL022W, YPL023C, YPL030W, YPL031C, YPL042C, YPL051W, YPL066W, YPL069C, YPL072W, YPL075W, YPL076W, YPL077C, YPL085W, YPL091W, YPL092W, YPL093W, YPL095C, YPL097W, YPL103C, YPL104W, YPL105C, YPL106C, YPL110C, YPL120W, YPL121C, YPL144W, YPL154C, YPL163C, YPL165C, YPL171C, YPL178W, YPL181W, YPL188W, YPL189W, YPL198W, YPL199C, YPL201C, YPL204W, YPL207W, YPL208W, YPL222W, YPL225W, YPL229W, YPL231W, YPL233W, YPL236C, YPL239W, YPL244C, YPL249C-A, YPL260W, YPL263C, YPL270W, YPL271W, YPL272C, YPL274W, YPL277C, YPL278C, YPL280W, YPL281C, YPL282C, YPR001W, YPR002W, YPR006C, YPR008W, YPR019W, YPR023C, YPR025C, YPR034W, YPR040W, YPR054W, YPR061C, YPR065W, YPR067W, YPR079W, YPR091C, YPR093C, YPR098C, YPR100W, YPR108W, YPR109W, YPR124W, YPR128C, YPR133W-A, YPR134W, YPR140W, YPR147C, YPR148C, YPR149W, YPR151C, YPR155C, YPR166C, YPR172W, YPR176C, YPR191W, YPR192W, YPR193C, YPR196W,

Genes belonging to Cluster 4 :-->

YAL012W, YAL018C, YAL022C, YAL042W, YAL043C, YAL053W, YAR044W, YBL017C, YBL029W, YBL033C, YBL047C, YBL056W, YBL103C, YBL105C, YBL113C, YBR011C, YBR022W, YBR040W, YBR041W, YBR045C, YBR059C, YBR077C, YBR081C, YBR082C, YBR109C, YBR119W, YBR123C, YBR127C, YBR133C, YBR198C, YBR200W, YBR208C, YBR210W, YBR212W, YBR213W, YBR219C, YBR231C, YBR233W, YBR234C, YBR255W, YCL009C, YCL018W, YCL025C, YCL055W, YCL057W, YCL068C, YCL069W, YCR002C, YCR004C, YCR012W, YCR018C, YCR028C-A, YCR052W, YCR059C, YCR067C, YCR073W-A, YCR082W, YCR086W, YCR088W, YCR098C, YDL001W, YDL006W, YDL010W, YDL012C, YDL040C, YDL056W, YDL058W, YDL065C, YDL085W, YDL103C, YDL134C, YDL140C, YDL145C, YDL160C, YDL166C, YDL173W, YDL192W, YDL195W, YDL197C, YDL198C, YDL210W, YDL224C, YDL230W, YDL247W, YDL248W, YDR014W, YDR016C, YDR022C, YDR043C, YDR050C, YDR054C, YDR067C, YDR077W, YDR124W, YDR145W, YDR174W, YDR189W, YDR233C, YDR238C, YDR252W, YDR254W, YDR259C, YDR283C, YDR284C, YDR286C, YDR295C, YDR315C, YDR320C-A, YDR331W, YDR333C, YDR335W, YDR347W, YDR352W, YDR353W, YDR357C, YDR359C, YDR361C, YDR363W, YDR363W-A, YDR371W, YDR374C, YDR376W, YDR385W, YDR392W, YDR394W, YDR408C, YDR414C, YDR428C, YDR441C, YDR457W, YDR459C, YDR463W, YDR476C, YDR477W, YDR481C, YDR522C, YDR532C, YDR545W, YEL013W, YEL031W, YEL037C, YEL058W, YEL059C-A, YEL077C, YER013W, YER019W, YER022W, YER023W, YER041W, YER042W, YER048W-A, YER051W, YER063W, YER068W, YER072W, YER074W-A, YER092W, YER099C, YER101C, YER104W, YER120W, YER123W, YER124C, YER129W, YER133W, YER139C, YER151C, YER155C, YER157W, YER164W, YER166W, YER168C, YER172C, YER174C, YER178W, YER185W, YER185W, YER190W, YFL004W, YFL010W-A, YFL021W, YFL031W, YFL037W, YFL038C, YFL039C, YFL047W, YFL050C, YFL056C, YFL057C, YFR024C-A, YFR026C, YFR029W, YFR035C, YFR047C, YFR055W, YGL009C, YGL027C, YGL038C, YGL060W, YGL066W, YGL073W, YGL081W, YGL085W, YGL093W, YGL095C, YGL097W, YGL105W, YGL113W, YGL115W, YGL127C, YGL133W, YGL135W, YGL140C, YGL150C, YGL153W, YGL158W, YGL159W, YGL168W, YGL173C, YGL178W, YGL183C, YGL195W, YGL207W, YGL210W, YGL213C, YGL219C, YGL223C, YGL231C, YGL233W, YGL245W, YGL249W, YGL253W, YGL262W, YGL263W, YGR013W, YGR029W, YGR092W, YGR104C, YGR116W, YGR125W, YGR133W, YGR135W, YGR136W, YGR155W, YGR157W, YGR170W, YGR178C, YGR184C, YGR196C, YGR202C, YGR206W, YGR212W, YGR218W, YGR224W, YGR226C, YGR268C, YGR271W, YGR278W, YGR282C, YGR296W, YHL002W, YHL006C, YHL010C, YHL012W, YHL023C, YHL034C, YHL047C, YHL050C, YHR030C, YHR033W, YHR047C, YHR060W, YHR063C, YHR073W, YHR074W, YHR079C-A, YHR086W, YHR099W, YHR107C, YHR108W, YHR110W, YHR114W, YHR124W, YHR132C, YHR135C, YHR136C, YHR155W, YHR165C, YHR178W, YHR181W, YHR186C, YHR188C, YHR194W, YHR196W, YHR208W, YHR210C, YHR216W, YHR219W, YIL002C, YIL010W, YIL015W, YIL018W, YIL019W, YIL033C, YIL034C, YIL036W, YIL038C, YIL040W, YIL043C, YIL046W, YIL051C, YIL062C, YIL072W, YIL076W, YIL084C, YIL090W, YIL092W, YIL106W, YIL109C, YIL112W, YIL115C, YIL123W, YIL129C, YIL138C, YIL142W, YIL144W, YIL165C, YIL173W, YIL177C, YIR004W, YIR006C, YIR015W, YIR025W, YIR037W, YIR042C, YJL012C, YJL012C-A, YJL013C, YJL033W, YJL046W, YJL047C, YJL051W, YJL058C, YJL060W, YJL062W, YJL066C, YJL068C, YJL070C, YJL077C, YJL084C, YJL090C, YJL109C, YJL110C, YJL117W, YJL121C, YJL123C, YJL127C, YJL129C, YJL133W, YJL136C, YJL137C, YJL138C, YJL139C, YJL140W, YJL144W, YJL145W, YJL148W, YJL149W, YJL156C, YJL157C, YJL161W, YJL170C, YJL171C, YJL172W, YJL173C, YJL176C, YJL179W, YJL193W, YJL201W, YJL203W, YJL207C, YJL209W, YJL210W, YJL222W, YJL225C, YJR005W, YJR017C, YJR024C, YJR025C, YJR050W, YJR060W, YJR066W, YJR068W, YJR072C, YJR076C, YJR078W, YJR079W, YJR083C, YJR084W, YJR094C, YJR095W, YJR102C, YJR106W, YJR107W, YJR114W, YJR115W, YJR117W, YJR118C, YJR120W, YJR125C, YJR130C, YJR131W, YJR135C, YJR138W, YJR139C, YJR160C, YJR161C, YKL007W, YKL008C, YKL010C, YKL011C, YKL018C-A, YKL023W, YKL025C, YKL040C, YKL041W, YKL108W, YKL138C, YKL138C-A, YKL164C, YKL176C, YKL178C, YKL190W, YKL194C, YKL196C, YKL201C, YKL203C, YKL204W, YKL207W, YKL219W, YKL221W, YKR001C, YKR034W, YKR035W-A, YKR037C, YKR059W, YKR066C, YKR071C, YKR084C, YKR089C, YKR093W, YKR100C, YLL018C, YLL036C, YLL050C, YLL063C, YLL066C, YLL067C, YLR013W, YLR016C, YLR023C, YLR026C, YLR052W, YLR054C, YLR072W, YLR077W, YLR079W, YLR085C, YLR087C, YLR091W, YLR095C, YLR099W-A, YLR114C, YLR118C, YLR131C, YLR132C, YLR145W, YLR146C, YLR150W, YLR154W-A, YLR155C, YLR157C, YLR158C, YLR160C, YLR176C, YLR195C, YLR200W, YLR206W, YLR208W, YLR220W, YLR238W, YLR240W, YLR242C, YLR245C, YLR248W, YLR250W, YLR266C, YLR268W, YLR308W, YLR329W, YLR330W, YLR337C, YLR351C, YLR357W, YLR360W, YLR361C, YLR371W, YLR389C, YLR423C, YLR425W, YLR426W, YLR429W, YLR440C, YLR442C, YLR466W, YLR467W, YML003W, YML015C, YML021C, YML029W, YML031W, YML041C, YML047C, YML048W, YML049C, YML051W, YML053C, YML067C, YML072C, YML085C, YML110C, YML112W, YML114C, YML119W, YML121W, YML127W, YML129C, YML133C, YMR004W, YMR010W, YMR021C, YMR027W, YMR028W, YMR037C, YMR043W, YMR044W, YMR052W, YMR055C, YMR068W, YMR072W, YMR073C, YMR075W, YMR083W, YMR091C, YMR102C, YMR108W, YMR111C, YMR122W-A, YMR125W, YMR161W, YMR163C, YMR168C, YMR172W, YMR183C, YMR190C, YMR198W, YMR201C, YMR208W, YMR234W, YMR236W, YMR238W, YMR240C, YMR244C-A, YMR247C, YMR270C, YMR273C, YMR275C, YMR277W, YMR295C, YMR305C, YMR307W, YMR314W, YNL001W, YNL004W, YNL016W, YNL027W, YNL032W, YNL040W, YNL050C, YNL056W, YNL058C, YNL059C, YNL065W, YNL071W, YNL076W, YNL079C, YNL086W, YNL091W, YNL101W, YNL103W, YNL104C, YNL118C, YNL134C, YNL136W, YNL138W, YNL139C, YNL142W, YNL158W, YNL176C, YNL187W, YNL190W, YNL196C, YNL208W, YNL212W, YNL219C, YNL222W, YNL224C, YNL239W, YNL267W, YNL271C, YNL278W, YNL281W, YNL283C, YNL286W, YNL287W, YNL297C, YNL304W, YNL320W, YNL322C, YNL331C, YNL339C, YNR010W, YNR023W, YNR026C, YNR028W, YNR031C, YNR035C, YNR037C, YNR039C, YNR047W, YNR048W, YNR049C, YNR054C, YNR055C, YNR064C, YNR065C, YNR070W, YNR074C, YOL003C, YOL005C, YOL012C, YOL020W, YOL030W, YOL049W, YOL055C, YOL063C, YOL066C, YOL068C, YOL112W, YOL119C, YOL131W, YOL147C, YOL163W, YOL165C, YOR007C, YOR039W, YOR056C, YOR069W, YOR075W, YOR076C, YOR081C, YOR083W, YOR085W, YOR087W, YOR108W, YOR125C, YOR133W, YOR141C, YOR149C, YOR151C, YOR157C, YOR174W, YOR179C, YOR181W, YOR185C, YOR189W, YOR209C, YOR226C, YOR231W, YOR247W, YOR249C, YOR251C, YOR255W, YOR278W, YOR280C, YOR281C, YOR285W, YOR290C, YOR299W, YOR301W, YOR311C, YOR330C, YOR334W, YOR336W, YOR344C, YOR352W, YOR355W, YOR356W, YOR362C, YOR368W, YOR369C, YOR396W, YPL003W, YPL008W, YPL014W, YPL015C, YPL018W, YPL026C, YPL029W, YPL036W, YPL039W, YPL043W, YPL045W, YPL046C, YPL058C, YPL070W, YPL074W, YPL084W, YPL096W, YPL098C, YPL112C, YPL113C, YPL116W, YPL124W, YPL145C, YPL146C, YPL157W, YPL174C, YPL176C, YPL183C, YPL183W-A, YPL191C, YPL192C, YPL195W, YPL203W, YPL206C, YPL212C, YPL215W, YPL216W, YPL220W, YPL227C, YPL237W, YPL254W, YPL265W, YPL283C, YPR020W, YPR024W, YPR030W, YPR04

3W, YPR055W, YPR057W, YPR063C, YPR075C, YPR083W, YPR088C, YPR103W, YPR107C, YPR114W, YPR117W, YPR127W, YPR129W, YPR131C, YPR138C, YPR139C, YPR159W, YPR161C, YPR165W, YPR171W, YPR182W, YPR183W, YPR185W, YPR189W, YPR194C, YPR201W, YPR204W,