Práctica de bioinformática 1 :

1.-Búsqueda de la Locus: AT4G30510 (TAIR o NCBI)

2.-Buscar el Homologo en Frijol de AT4G30510

3.-Buscar extraer la secuencia de Proteína y agregarlo a el fasta.

|  |
| --- |
| >PvATG18g.I.Phvul.001G146700.1  MKKGKSKNGGLLPNSLRIISLCLKTVSTNATTVASTVRSAGASVAASISSSSDDHKDQVT  WAGFDTLELDPSNCKRILLLGYLNGFQVLDVEDASGFSELVSKRDGPVSFLQMQPFPIGG  DGHEGFRKSHPLLLVVSGDDNSNVNRNSTCLSGLESDDNVEMNSGNDFKSSTTVRFYSLK  SHCYVHVLKFRSTVCMIRCSSQIVAVGLATQIHCFDAVTLQNKFCVLTYPVPQLAGQGTT  GVNFGYGPMAVGPRWLAYASNTPLPSNLGCLSPQNCSTSSGISPSTTPRNGSLVARYAVE  SSRHLAAGIIKYCQDLLPDGSSSPMSSNSGVKVNRVTGIDTDNVGMVAVRDFVSKMIISQ  FKAHSSPLSALCFDPSGTLLVTASVYGNNINIFRIMPSFTCKSSGIPGSNWNSSHVHLYK  LHRGITPAMIQDICFSNFSQWIAIVSSKGTCHLYILSPFGGDTGFRIISSQGEEPSLLPV  FPLPWWYTPGSISYQQSLPPPAPVVLFVASRIKYSSFGWLNTVHNSAANYTGKVFVPSGA  IAAIFHNSLSHSQLVNSKANPLEHILVYTPSGHVVQHELLPSVSSETSDTSLGNQSTSLL  HMQEDEFRVKVEPIQWWDVCRRSEWPEREDTCINTFDRQGGIDRVQEKIGYSDIYGLDFL  GISDGAGEKMVKSSSENMQERFHWYLSNAEVQGNFGRLPIWQKSKICFYSMSSVGDTFSA  TGEFEIERVPANEVEIKRKELLPAFDNFYSIRSSLSERGLAGERYLRPSSPVPNQGDYKE  TADVTVICHSKPASLSSTESSDGGSSRRIENLLDLDHVASSYQIHGEICLERTGTINVEP  SLQNQIVMESPSRVLGNSKNVDFNADLISSPLFQKTNVTSDGRDSIGFGINENSALVLEH  FSHETEFVEAKQEGAGISLTDGHCQTEEHDGSNLLTEVATDDVDSSSSHHEKEQLEEDEE  NDETLSDIFDFFKEG  >PvATG18a.II.Phvul.001G205000.1  MATLSACSSPPWPDPNPTTSPNSDPNPNFLPDQSQTLDFESLMPPQPKSPPQYRSPAASP  PGLSPETPPSVLHVAFNQDQACFSAATDNGFRIYNCNPFSEQFRREFDGGGIGHVEMLFR  CNIIALVGGGPHPKYSPNKVMIWDDHEGCCIGDLSPRAAVRSVRLRRDRIIVVIEQKILV  YNFQDLSLLHQIETYPNPKGLCAVSQLSDSLVLACPGLQKGQIRVEHYAQKKTKFISAHD  SRIACFALTLDGQFIATASTKGTLIRIFDTVQGTLLQEVRRGANVAEIYSLAFSSTARWL  AVSSDKGTVHVFSLKVNSSIPEQEKPQNSSNSDAAITPSNSSRSFTKFKGVLPKYFNSEW  SVAQFRLQEGSHYTVAFGHEKNTVIILGMDGSFYRCQFDPVNGGEMTQLEYHNFLKPEPE  TAL  >PvATG18g.II.Phvul.005G091300.1  MIEGEFGESLIFVLWLGSILVFLVMGMRNDAQKQQLLHQGNGGGKTSGFIPSSFRALSSY  LRIVSSGASTVARSAASVVASSVVERDDLPDHDQVIWAGFDKLEGEGEVSQKVLLLGYRS  GFQVWHVDESNNVRDLVSRHDGPVSFMQMVPNPIASKRSEDNYSNSRQLLVVCTDGFFVG  GSNVQDGLVTPNNGSTLNSHDQMNGNYLPTTVRFYSMKSQSYVHVLKFRSVVYSVRCSPR  VVAISQSTQIHCFDATTLIRAYILHTNPIVMSVSGSGGIGYGPLAVGPRWLAYSGSPVAV  SNSGHVSAQHLIPSASFSGFSSNGSLIAHYAKESSKHIATGIVSLGDMGYKKLSRYCSDT  NGSLQSVNSSSKGIGTINSHSTDADNIGMVIVKDIVSRNVIAQFRAHKSPISALSFDPSG  TILVTASIQGHNINVFKIMPVQDNLSASDTGPYVHLYKLQRGFTNAVIQDISFSDDSKWI  MISSSRGTSHLFAINPQGGHVNIQSYDDDSFTTKNSGLGTTANHPPGWTHSSAMLKPKQK  SLVVAGPPITLSVVSRIRNGANGWRGTVTGAAAAATGRKTSLSGAIASSFRKYKSSEGNN  SKYQLLVFSPTGSMIQYALRMLTSQDSAVVSGLAPAYESLPQDDARLVVEAMQKWNICHS  RREREDNIDIYGENGMSDAKKIYPEEMGEEHTITPKIRNGVIKVNPSLEEKHHLYISEAE  LQMHQAQTSLWSKPEIYFHSMLQEPNIEAPSEGEFEIEKIPTCVIEARSKDLVPIVDYFQ  SPNLQQTRTSIDRKRDDQLSHHGLRPSGNGRISSRTDDDGDALSEFKSGIEGTEWDNHVM  PSETVSFVNNSDTFKPNTQHEIVNNRREHLNTEAQLMFVNSDRKLEESF  >PvATG18h.I.Phvul.007G183100.1  MKNQTKDNGGSKSSNGFVPSSFKFISSCIKTASSGVRSAGASVAASISGEGHDRKDQVLW  ACFDRLELSPSSFKHVLLLGYSNGFQVLDVEDASSVRELVSRRDDPVSFLQMQPVPTKSE  GCEGFGASHPLLLVVACDKSKIPGKMLNVRDGHNEAQAENIVSSATAVRFYSLRSHTYVH  ALRFRSTVYMVRCSPRIVAVGLATQIYCFDALTLENKFSVLTYPVPQLGGQGMIGVNVGY  GPMAVGPRWLAYASNSPLLSNTGRLSPQSLTPPAGSPSTSPSSGNLVARYAMESSKHLAA  GLINLSDMGYKTLSKYYQDLIPDGSSSPVSSNSSWKVSRFASNSTETDTAGMVVVKDFVS  RAVVAQFRAHTSPISALCFDPSGTLLVTASIHGNNINIFRIMPSCSRNGSGSQSSDWSCS  HVHLYKLHRGMTSAVIQDICFSHYSHWVAIISSKGTCHIFVLAPFGGETVLKMNDQDTDG  PALLPIFPLPWWFTPHFTVNHQQLSMTPPPPVVLSVVSRIKNSNAGWLNTVSNAASSAAG  KVPIPSGAVSAVFHSSIPHVSQNAYSKIHAMEHLLVYTPSGHLIQYKLLSPLAAESSETT  LRTAPVPLAQIQEEDLRVKVEPVQWWDVCRRYDWPEKEVCVPGNTVGGLEAAEMILDNSD  YEVNSIGSNNSIKLNKQCHFSNAEVHISSGRIPIWQESQVSLFVMSPLEAGVPDSYELST  RGEIEIENIPANEIEIKQKDLLPIFDHFHRIQSTWGDRGIVMGRCSSSSSDSHGAEEKLS  EEAVIFNSKLTVPGLAEKTFVGASGFADAITAKVKSSNHDKASDSFNSSSSGCDLNMNVI  CEESIRDSPDFEQFFQEGYCKASVDCHESTEVITEVDCSSPCGREKSDEDGDIDDMLGDV  FDFSEEG  >PvATG18a.I.Phvul.007G196400.1  MSHTPPQTLDSEEPSPATAAQTPDSQAATLLHISFNQDSGCFAAATDRGFRIYNCDPFRE  IFRRDFGPGGGVGLVHMLFRCNILAFVGGGADPRYPPNKVMIWDDHQSRCIGELSFRSEV  KGVRLRRDRIVVVLAHKIFVYNFSDLKVLHQIETIANPKGLCDLSHVSATMVLVCPGLQK  GQVRVEHYASKRTKFIMAHDSRIACFALTHDGRLLATASSKGTLIRLFNTLDGSLLQEVR  RGADRAEIYSLAFSPTAQWLAVSSDKGTVHVFNLKVDSGLMGHDRSHSTSSEANPASPTA  VSSLSFIKGVLPKYFSSEWSVAQFRLQEGLQYVVAFGHQKNTIVILGMDGSFYRCQFDSG  NGGEMTQLEYYNFLKAEETF  >PvATG18c.I.Phvul.009G041700.1  MQQRMEGSPLSRMSSSGSIYQGIFPNSRIGNSASPNGGASPSFTLPIGDMNENDDTDLLS  ITWNQDYRCFAAGTSHGFRIYNCKPCKETFRRDMKSGGFKIVEMLFRCNLLALVGSVANS  HYPPNKVLIWDDYQSRCMGVFTFRSEVRGVKLRRDRIVIVLEHKIYVYNFTDLKLLHQIE  TLANPRGLCCLSHHSNTFVLACPGLNKGQVRVEHFGLNVTKLISAHDSQIACLTLTLDGL  LLATASITGTLIRIFNTMDGTQLQEVRRGADRAEINSIAFSPNVQWLAASSDKCTVHVFS  LRVRVSGEDSLNQPNVAQGPALFHQNSSTSMDPLISPNTGANPNSAFSFMRGLLPKYFSS  EWSFAQFRLPQSTNLIVAFGSENDVIIVGMNGSFYRCSFDIVHGGEMVQQEYVRFLKIEN  RP  >PvATG18f.I.Phvul.011G140900.1  MIEFKGGFEESVVTLLLLCLWIAVIFISLVLGMSRNDGQKQRHLLHGGVAAGTGGKTNSN  GFIPGSFRTFSGYLKIVSSGASTVARSAAASFASSILDKHDVADRDRVIWAGFDTLEGQG  EVIRQVLLLGYWSGFQVLDVDDSNNVCDLVSRNDGPVSFMQMVPSPTVLKKLEDKFVDKR  PLLAVCVNDFLAGGGNIREGLVATCNGGTLNHHDQVNGNYLPTTVQFYSMRSQSYIHTLN  FRSVVYSVRCSSRVVAVSLSTQIHCFSPTTLVREYILHTNPIAMSYPGSGGIGFGPLAVG  PRWLAYSGSPAVIASSGRVSPHHLTPSASFPGFSSNGSLVAHYAKESSKHLAAGIVTLGD  MGYKKLSGYCSELLPDNSGSIQSVNSSTKGNGIIHGHSTDVESVGMVIVRDIVSKNVVAQ  FQAHKSSISALCFDPSGTILVTASVQGHNINVFKIMPGYETVSASDAAPSYVHLYRLQRG  LTNAVIQDISFSIDTRWIMISSSRGTSHLFAINPQGGPVNILSCDNSLTEKDGLNVMPNQ  AVHWPRSSAVEICKRQSFCAAGPPITLSAVSRIRNGSNGWRSTVTGAASGAIASSFHNFE  GRSTLDVNGNYSKEKYHLFVFTSTGSMIQYALQTINCQDSGVVSGLVPAHESAPLTDARV  VVEPIKKWNINRRYSWREGEENIDIYGDNGVSDIDKVYSEDVKDNIISPKMKNVSVKLNS  CSEKEHHLYISEAELQMHEAKTPLWAKTEIYFHSVAKEDTLMMDEKAASGGEFEIEKIPT  RVIEARLKDLVPILDFIQTSKFQYTRTPAVENKLNAPFLHQNSKLFEKGRISPGSRSPGC  MTNSGGNIAEFNGGFEGNEWDEGSIPAEAEGLVNNNNTLKPDTRPETVNNRRGHIEMDVH  HMFVNSDRKGLKLENPHEEKEGDFD |

4.-Hacer alineamiento de proteína con MAFFT

5.-Hacer árbol filogenético (Simple phylogentic y IQTree)

6.- buscar la sintenia de los identificadores de los fastas

phvul.001g205000

phvul.003g152800

phvul.009g041700

phvul.007g196400 . . .

<https://www.legumeinfo.org/>

<https://gcv.legumeinfo.org/gcv2/gene;lis=phavu.Phvul.002G100400?q=Phvul.002G100400&sources=lis&algorithm=repeat&match=10&mismatch=-1&gap=-1&score=30&threshold=25&bmatched=20&bintermediate=10&bmask=10&linkage=average&cthreshold=20&neighbors=10&matched=4&intermediate=5&bregexp=&border=chromosome&regexp=&order=distance>

7.-Búsqueda del artículo: Exploration of Autophagy Families in Legumes and Dissection of the ATG18 Family with a Special Focus on *Phaseolus vulgaris*