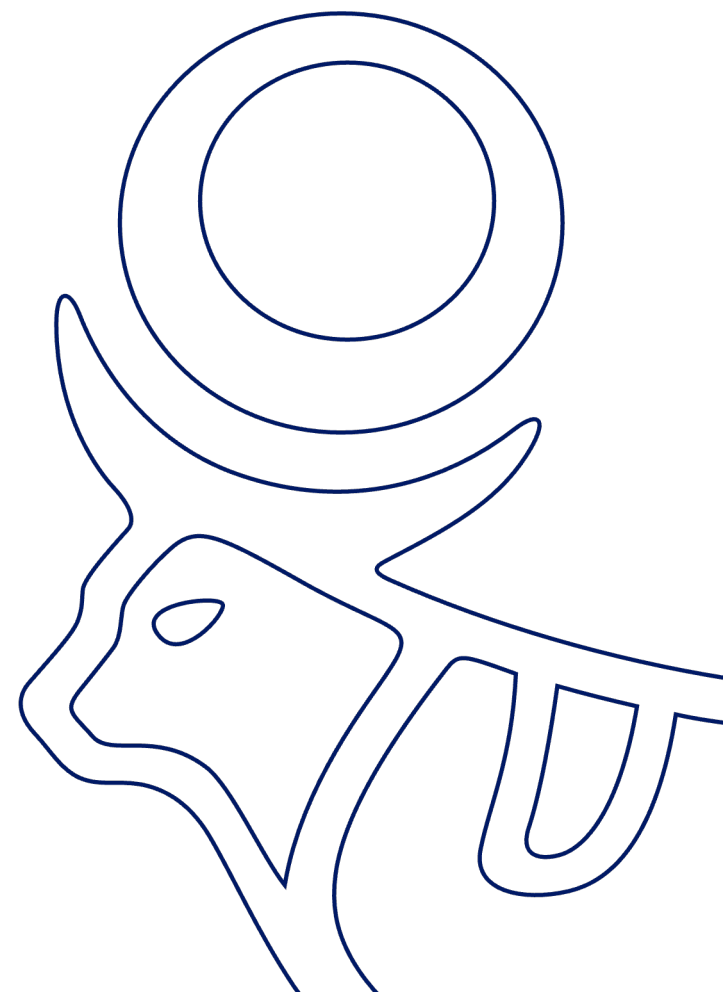


# TDagent empowered by AWS Quick Suite

Case and demo details

LZLZ

2025-12-12



Overview of the TDagent design

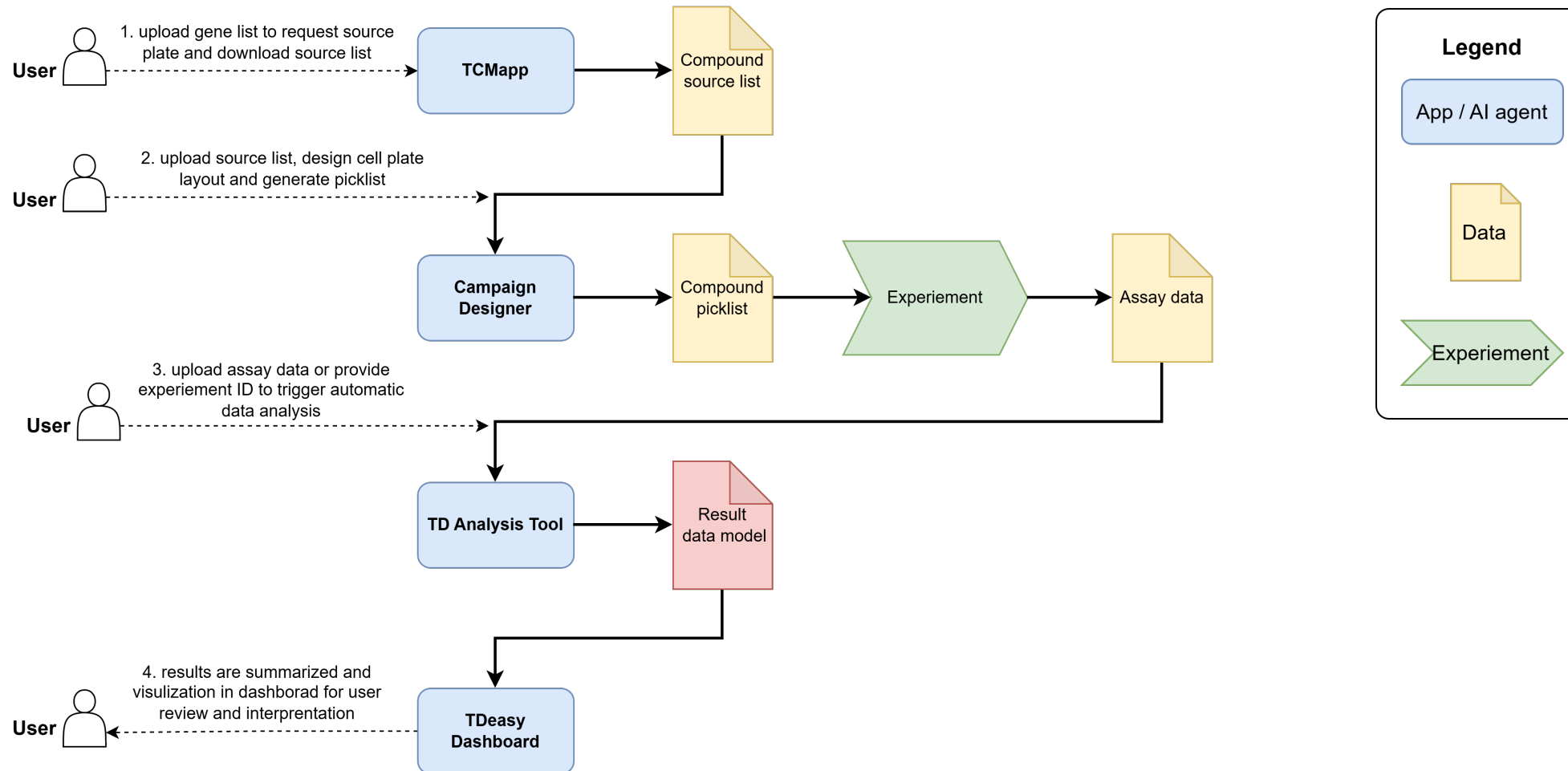
Case 1: Smart Campaign Designer

Case 2: Elegant Campaign Dashboard - TDeasy

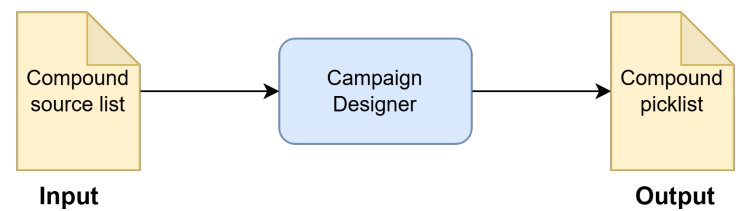
# TDagent | A centralized platform for end-to-end campaign management

- **Scope:** One site for scientist to design TD campaign, register experiment, analyze data, visualize result and share conclusion in line with data fairness principles.
- **Core elements:**
  - **TCMapp** for compound management, source plate requesting and new compound ordering.  
*Status: already built and maintained by DT department.*
  - **Campaign Designer** for designing cell plate layout of compound perturbation assay according to the source plate and to generate ready-to-used compound picklist.  
*Status: a light version existing only for picklist generation but not smart and fails to cover many cases.*
  - **TD Analysis Tool** for automatic data analysis and data model generation.  
*Status: the framework is built, and more assays need to be onboard into pipeline.*
  - **TDeasy** for data summarization and visualization, as well as tracking and recording all campaign activities and conclusions (data-integrated “ELN”).  
*Status: Not exists.*

# Workflow of TDagent

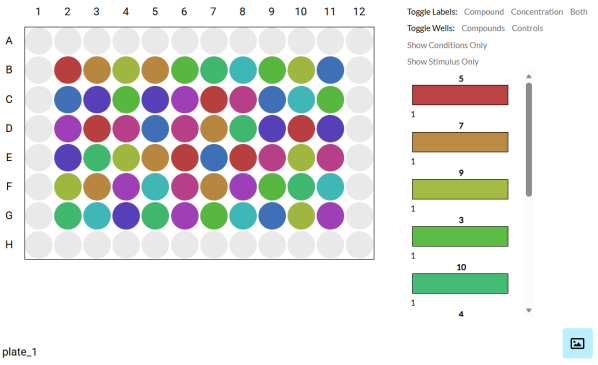


# Case 1 | Smart Campaign Designer



- I need an agent to help me with plate layout design, for example :
- 1. I have a new experiment to investigate 10 genes. I want these 10 genes distributing randomly in a 96-well plate and leave the one outer layer empty. Each gene has 6 replicates.★
  - 2. These 10 genes are in the source plate SRCPALT1. Transfer 1 nmol gene from the source plate to the designed plate according to the concentration and volume provided by the source list.
  - 3. Generate the picklist as the Echo picklist format.

- ★ 1. The requested design varies from experiment to experiment and specified by the user. The agent should understand what users needs or ask standard input from user. For example: I want these 10 genes locating by column (按列排布)
- 2. There could be multi layers of deigns, such like one layer is genes which are randomized; another layer is treatment which are column-based. etc.... Case-by case , maybe only the gene layer needs picklist but not the treatment layer.



Source list: REQ\_source list\_barcode.xlsx  
The “Source\_Info” sheet contains the position of genes in a source plate.

plate_id	plate_barcode	tube_barcode	well_id	well_column	well_row	well_vol	well_vol_unit	gene_symbol	species	compound_name
SRCPALT1	TDEsIRNA1102001CP1	4031981834	A01	1	1	45 uL		Gene1	HUMAN	Gene1
SRCPALT1	TDEsIRNA1102001CP1	4031981842	C01	1	3	45 uL		Gene2	HUMAN	Gene2
SRCPALT1	TDEsIRNA1102001CP1	4031981850	E01	1	5	45 uL		Gene3	HUMAN	Gene3
SRCPALT1	TDEsIRNA1102001CP1	4031981852	G01	1	7	45 uL		Gene4	HUMAN	Gene4
SRCPALT1	TDEsIRNA1102001CP1	4031981858	I01	1	9	45 uL		Gene5	HUMAN	Gene5
SRCPALT1	TDEsIRNA1102001CP1	4031981866	K01	1	11	45 uL		Gene6	HUMAN	Gene6
SRCPALT1	TDEsIRNA1102001CP1	4031981874	M01	1	13	45 uL		Gene7	HUMAN	Gene7
SRCPALT1	TDEsIRNA1102001CP1	4031981883	O01	1	15	45 uL		Gene8	HUMAN	Gene8
SRCPALT1	TDEsIRNA1102001CP1	4031981890	A03	3	1	45 uL		Gene9	HUMAN	Gene9
SRCPALT1	TDEsIRNA1102001CP1	4031981891	C03	3	3	45 uL		Gene10	HUMAN	Gene10

Picklist: ExpID\_EchoPicklist.csv \*\*\*  
The EchoPicklist tells how to transfer genes (compound) from source plate well to the designed destination plate well, and how much volume should be transferred.

Source Plate Barcode	Source Well	Source Plate Type	Destination	Destination Plate Type	Destination Well	Transfer Volume	GENE_SYMBOL	COMPOUND_LABEL
SRCPALT1	C3	384PP_AQ_BP	plate_1	Corning_96_Uplate	B2	375	Gene3	Gene3
SRCPALT1	M9	384PP_AQ_BP	plate_1	Corning_96_Uplate	B3	375	Gene7	Gene7
SRCPALT1	E3	384PP_AQ_BP	plate_1	Corning_96_Uplate	B4	375	Gene9	Gene9
SRCPALT1	M9	384PP_AQ_BP	plate_1	Corning_96_Uplate	B5	375	Gene3	Gene3
SRCPALT1	A1	384PP_AQ_BP	plate_1	Corning_96_Uplate	B6	375	Gene4	Gene4
SRCPALT1	G3	384PP_AQ_BP	plate_1	Corning_96_Uplate	B7	375	Gene10	Gene10
SRCPALT1	A11	384PP_AQ_BP	plate_1	Corning_96_Uplate	B8	375	Gene3	Gene3
SRCPALT1	E1	384PP_AQ_BP	plate_1	Corning_96_Uplate	B9	375	Gene2	Gene2
SRCPALT1	G1	384PP_AQ_BP	plate_1	Corning_96_Uplate	B10	375	Gene10	Gene10
SRCPALT1	K3	384PP_AQ_BP	plate_1	Corning_96_Uplate	B11	375	Gene7	Gene7
SRCPALT1	E3	384PP_AQ_BP	plate_1	Corning_96_Uplate	C2	375	NTC	NTC
SRCPALT1	C1	384PP_AQ_BP	plate_1	Corning_96_Uplate	C3	375	Gene2	Gene2
SRCPALT1	G1	384PP_AQ_BP	plate_1	Corning_96_Uplate	C4	375	Gene7	Gene7
SRCPALT1	E1	384PP_AQ_BP	plate_1	Corning_96_Uplate	C5	375	Gene9	Gene9
SRCPALT1	K3	384PP_AQ_BP	plate_1	Corning_96_Uplate	C6	375	Gene3	Gene3
SRCPALT1	I1	384PP_AQ_BP	plate_1	Corning_96_Uplate	C7	375	Gene2	Gene2
SRCPALT1	M9	384PP_AQ_BP	plate_1	Corning_96_Uplate	C8	375	Gene3	Gene3
SRCPALT1	O1	384PP_AQ_BP	plate_1	Corning_96_Uplate	C9	375	Gene6	Gene6
SRCPALT1	M9	384PP_AQ_BP	plate_1	Corning_96_Uplate	C10	375	Gene8	Gene8
SRCPALT1	I3	384PP_AQ_BP	plate_1	Corning_96_Uplate	C11	375	NTC	NTC
SRCPALT1	O1	384PP_AQ_BP	plate_1	Corning_96_Uplate	D2	375	Gene8	Gene8
SRCPALT1	I3	384PP_AQ_BP	plate_1	Corning_96_Uplate	D3	375	Gene5	Gene5
SRCPALT1	K1	384PP_AQ_BP	plate_1	Corning_96_Uplate	D4	375	Gene6	Gene6
SRCPALT1	A3	384PP_AQ_BP	plate_1	Corning_96_Uplate	D5	375	Gene7	Gene7
SRCPALT1	G3	384PP_AQ_BP	plate_1	Corning_96_Uplate	D6	375	Gene9	Gene9
SRCPALT1	M1	384PP_AQ_BP	plate_1	Corning_96_Uplate	D7	375	Gene8	Gene8
SRCPALT1	K3	384PP_AQ_BP	plate_1	Corning_96_Uplate	D8	375	Gene9	Gene9
SRCPALT1	F3	384PP_AQ_BP	plate_1	Corning_96_Uplate	D9	375	Gene8	Gene8

\*\*\* Notification: the demo source list and picklist are not real data neither match each other. They only provide the example of format and contents.