ProductInformation

DOPAMINERGIC LIGAND-SET™

Product Number **L 6412**
Storage Temperature –20 °C

Product Description
The Dopaminergic LIGAND-SET™ is a set of 80 small organic ligands to the Dopamine receptors. These ligands are arrayed in a standard 96-well plate format; each well has a capacity of 1 ml.

This set can be used for screening new drug targets, for guiding secondary screens of larger, more diverse libraries and for standardizing and validating new screening assays.

Dopamine receptors were initially divided into two categories on the basis of differences in receptor pharmacology and biochemical mechanisms of signal transduction. With the application of molecular biology methodology, the two prototypical dopamine receptors, D_1 and D_2, were cloned. Later other dopamine receptors with homology to either the D_1 or D_2 receptor were identified. Thus, at present, two families of vertebrate dopamine receptors (designated D_1-like and D_2-like) are recognized. The D_1-like family consists of the D_1 and D_5 receptors while the D_2-like family consists of the D_2, D_3 and D_4 receptors.

The D_1 and D_2 receptors occur in sufficiently high concentrations that they can be studied *in situ*. The D_3, D_4 and D_5 receptors occur in such low concentrations that study of them *in situ* is difficult. Thus, most studies of these receptors have been accomplished using cell lines cloned to express these receptors.

The two families of receptors, the D_1-like and D_2-like receptors, are grouped together based on a shared pharmacology and structural similarities. The D_1-like receptors stimulate adenylate cyclase to increase the production of the second messenger, cAMP. D_1-like receptors also stimulate the turnover of phospho-inositides in the cells. D_2-like receptors inhibit adenylyl cyclase, which decreases the production of cAMP. The D_2-like receptors also inhibit Ca^{2+} entry through voltage-sensitive Ca^{2+} channels and enhance K^+ conductance. They also modulate phosphoinositide metabolism.

Components/Reagents
The Dopaminergic LIGAND-SET™ contains 2 mg of each ligand per well. Stock solutions can be readily prepared by adding 1 ml of DMSO to each well. The set also comes with a diskette containing a structure database, or SD file, and a Microsoft Excel file containing the catalog number, name, rack position and pharmacological characteristics of each ligand. The following is a listing of all the ligands included:

A1260	Amantadine hydrochloride
A-206	Agroclavine
A-255	A-77636 hydrochloride
B-102	Bupropion hydrochloride
B-135	R(+)-6-Bromo-APB hydrobromide
B-168	(±)-Butaclamol hydrochloride
B2134	(+)-Bromocriptine methanesulfonate
C-126	S(-)-Carbidopa
C-130	(±)-Chloro-APB hydrobromide
C-171	Clozapine
C-207	4'-Chloro-3-alpha-(diphenylmethoxy)tropane hydrochloride
C8138	Chlorpromazine hydrochloride
D-002	6,7-ADTN hydrobromide
B-136	S(-)-6-Bromo-APB hydrobromide
D-004	R(-)-Apomorphine hydrochloride
D-008	R(-)-2,11-Dihydroxy-10-methoxyaporphine hydrochloride
D-009	L-3,4-Dihydroxyphenylalanine
D-027	R(-)-Propylnorapomorphine hydrochloride
D-029	R(-)-2,10,11-Trihydroxyaporphine hybrobromide
D-030	R(-)-2,10,11-Trihydroxy-N-propyl-noraporphine hydrobromide
D-031	Dipropyldopamine hydrobromide
D-040	R(-)-Norapomorphine hydrobromide

D-042	R(-)-N-Allylnorapomorphine hydrobromide
D-044	Amfonelic acid
D-046	(+)-Bulbocapnine hydrochloride
D-047	(±)-SKF-38393 hydrochloride
D-052	GBR-12909 dihydrochloride
D-054	R(+)-SCH-23390 hydrochloride
D-122	Domperidone
D-155	Dihydroergocristine methanesulfonate
D-206	S(-)-DS 121 hydrochloride
D2763	Dihydroergotamine methanesulfonate
D5886	N-Methyldopamine hydrochloride
D9128	DOPAC
F-100	Fluspirilene
F-114	cis(Z)-Flupentixol dihydrochloride
F4765	Fluphenazine dihydrochloride
G-120	GYKI 52895
G9659	GBR-12935 dihydrochloride
H-100	Haloperidol
H3132	4-Methoxy-3-hydroxyphenethylamine hydrochloride
H8502	Dopamine (5-hydroxytyramine) hydrochloride
H8653	(±)-7-Hydroxy-DPAT hydrobromide
I-119	Indatraline hydrochloride
I-139	S(-)-IBZM
J-102	JL-18
L-106	Loxapine succinate
L-118	R(+)-Lisuride hydrogen maleate
L-131	L-745,870 hydrochloride
M0763	Metoclopramide hydrochloride
M-153	Mesulergine hydrochloride

N1530	Nomifensine maleate
O-111	(±)-Octoclothepin maleate
P-102	R(+)-3PPP hydrochloride
P-103	S(-)-3PPP hydrochloride
P-105	(±)-PPHT hydrochloride
P1793	Pimozide
P-183	S(+)-PD 128,907 hydrochloride
P8828	Pergolide methanesulfonate
P9178	Prochlorperazine dimaleate
P9233	Piribedil maleate
Q-102	(-)-Quinpirole hydrochloride
Q-110	Quinelorane dihydrochloride
R-108	Ro 41-0960
D-017	3-Hydroxyphenethylamine hydrochloride
R-121	S(+)-Raclopride L-tartrate
R-123	RBI-257 maleate
S-143	(±)-6-Chloro-PB hydrobromide
S-159	R(-)-SCH-12679 maleate
S-168	(±)-SKF 38393, N-allyl-, hydrobromide
S7395	Spiperone hydrochloride
S8010	(±)-Sulpiride
T0750	Thiothixene hydrochloride
T-103	Trifluperidol hydrochloride
T-165	R(+)-Terguride
T2879	4-Hydroxyphenethylamine hydrochloride
T8516	Trifluoperazine dihydrochloride
T9028	Thioridazine hydrochloride
U-115	U-101958 maleate
U-116	U-99194A maleate

Preparation Instructions

To create a new database in ISIS™/BASE :

- Open ISIS™/BASE.
- Choose **File>New database**.
- Enter **Dopaminergic** or a preferred name in the File name field.
- Click **Save**.

The "Create Database" window will now be open.

- Enter **Catnum** for the Field name.
- Choose **Variable text** from the drop down window of the Type field.
- Click Add.
- Repeat the above steps for the following:

Field name	Type
Name	**Variable text**
Position	**Variable text**
Action	**Variable text**
Class	**Variable text**
Selectivity	**Variable text**
SecName	**Variable text**
Description	**Variable text**

- Enter **Structure** for the Field name.
- Choose **Structure** from the drop down window of the Type field.
- Enter ***Structure** for the External name.
- Click **Add**.
- Click **Save**.

The main ISIS™/BASE window will now be open.

To create the Form:

- Click on the "Draw a box" button (second button down on the left of the screen).
- Move the mouse to the bottom left hand corner and draw a box, ½ inch high, the length of the screen by clicking on the left mouse button and dragging the mouse across the screen. (see figure below)
- Above this box, draw another ½ inch high box the length of the screen. (see figure below)
- Above this box, draw a third ½ inch high box the length of the screen. (see figure below)
- Above these long boxes draw 3 ½ inch high x 3 inch wide boxes. (see figure below)
- Above these 3 boxes, draw another three the same size. (see figure below)
- Draw a final box to fit the remaining space of the screen above these boxes. (see figure below)

Double click on the top box. This will open the Box properties window.

- Click on **Structure**.
- Click **OK**.
- Repeat the same steps, clicking on the appropriate field name for the appropriate box:

Box	Field name
First small box	**ID**
Second small box	**Catnum**
Third small box	**Position**
Fourth small box	**Action**
Fifth small box	**Class**
Sixth small box	**Selectivity**
First long box	**Name**
Second long box	**SecName**
Bottom long box	**Description**

- Choose **File>Save form**.
- Enter Dopaminergic or preferred name.
- Click **OK**.

Importing an SD file:

- Click **Update**.
- Choose **File>Import>SD File**. ***NOTE:*** *For MAC users, you must hold down the* ***option key*** *while choosing* **File>Import>SD File**. *If you do not, the Dopaminergic.sdf will not be visible in the import window.*
- Enter **Dopaminergic.sdf** (Located on the floppy diskette provided with the plate).
- Click **Open**.

The Import SD File window will now be open.

- Click on **Add a new record including structure**, on both sides of the table.
- Click **OK**.

The database is now ready to use.

Storage/Stability

Store plate –20 °C with cap strips firmly in place. Plate cover should only be removed when plate is in use to prevent loss of caps strips.

References

1. Kebabian, J.W., "Compounds selective for dopamine receptor subtypes." *Drug Discovery Today*, **2**, 333-340 (1997).
2. Missale, C., et al., "Dopamine receptors: From structure to function." *Physiol. Rev.*, **78**, 189-225 (1998).

SMS 8/00

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.