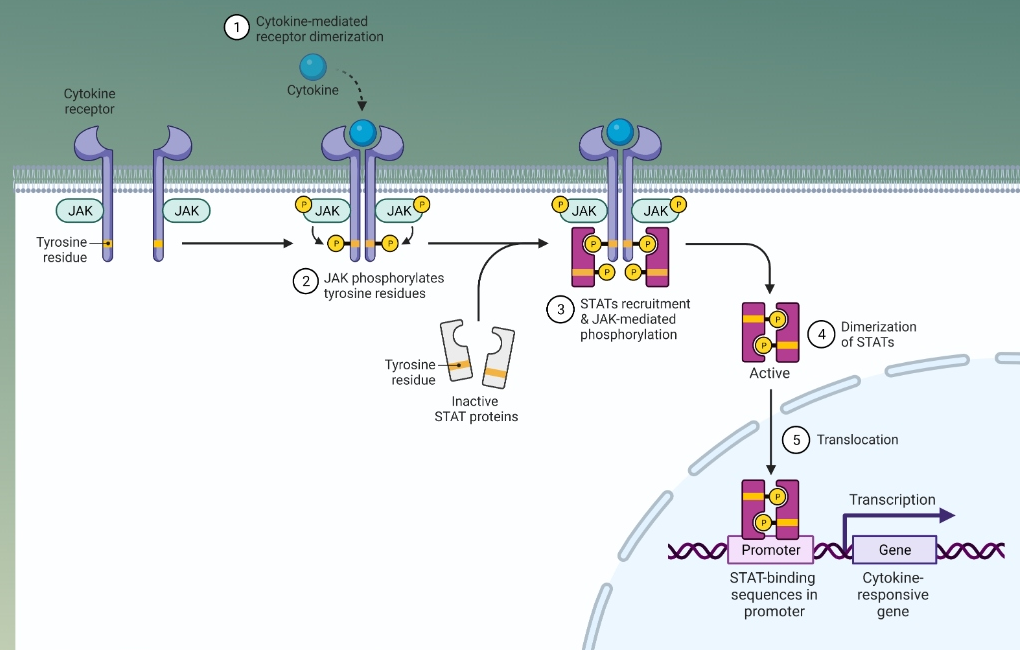


JAK-STAT Signaling Ligands

The chemical signals outside of the cell to the cell nucleus are transferred by JAK-STAT signaling pathways. These pathways are involved in cell division and death, processes of the immune response, etc. Initially, the dimerization of the extracellular domains of receptor Janus kinase (JAK) brings together the intracellular domains of protein induced by ligand binding (cytokine, for example). The JAKs phosphorylate each other, resulting in the activation of the kinases. The activated JAKs can phosphorylate a regulator of gene expression called STAT (Signal Transducer and Activator of Transcription). Activated STAT moves to the nucleus to regulate gene expression. Any deviations during JAK-STAT signaling pathways may lead to cancer, serious skin diseases, or immune system disorders. Thus, investigation in this area is one of the valuable targets for drug discovery.

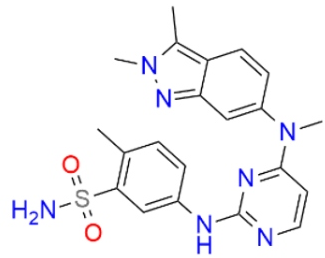
JAK-STAT Signaling Ligands Library contains 384 small ligands, some representative molecules are given below: Pazopanib, VEGFR receptor inhibitor; LY294002, TPK inhibitor; PF06700841, JAK1 inhibitor; SH-4-54, STAT3 inhibitor.

Related terms: epidermal growth factor, Janus kinase, platelet derived growth factor, Pim-1 proto-oncogene, serine/threonine kinase, colony stimulating factor, interleukin

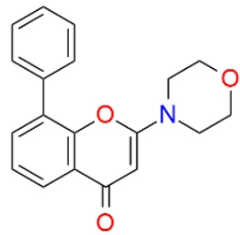


JAK-STAT signaling pathway (Created by BioRender.com)

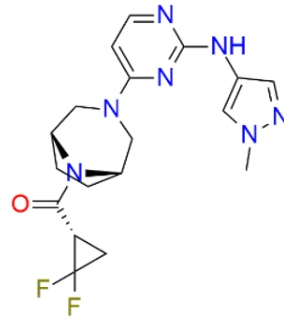
Highlights



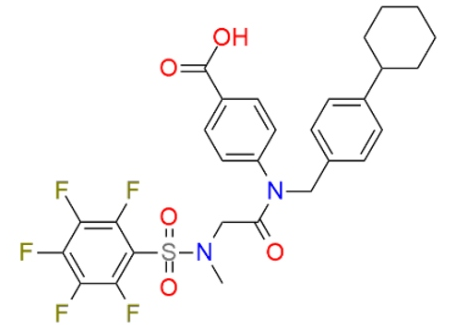
EBC-12617
CAS: 444731-52-6
Pazopanib, VEGF receptor inhibitor



EBC-11275
CAS: 154447-36-6
LY294002, Tyrosine-protein kinases inhibitor



EBC-00709
CAS: 1883299-62-4
PF-06700841, JAK1 inhibitor



EBC-13762
CAS: 1456632-40-8
SH-4-54, STAT3 inhibitor

Library Composition

Name	Occurrence in the library, times
epidermal growth factor receptor	80
Janus kinase 2	48
platelet derived growth factor receptor beta	39
Janus kinase 3	38
Pim-1 proto-oncogene, serine/threonine kinase	37
platelet derived growth factor receptor alpha	36
colony stimulating factor 1 receptor	34
interleukin 1 receptor associated kinase 4	32
tyrosine kinase 2	31
AKT serine/threonine kinase 1	30
interleukin 1 receptor associated kinase 1	28

B-Raf proto-oncogene, serine/threonine kinase		27
Janus kinase 1		25
signal transducer and activator of transcription 3		20
Pim-3 proto-oncogene, serine/threonine kinase		19
AKT serine/threonine kinase 2		18
Raf-1 proto-oncogene, serine/threonine kinase		18
phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit delta		14
AKT serine/threonine kinase 3		12
phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit beta		9
E1A binding protein p300		9
phosphoinositide-3-kinase regulatory subunit 1		8
interleukin 1 receptor associated kinase 3		8
Interleukin-2 receptor		4

Interleukin 21 receptor	•	4
Thrombopoietin receptor	•	4
Interferon- γ receptor	•	4
phosphoinositide-3-kinase regulatory subunit 2	•	3
Interleukin-4 receptor subunit α	•	3
Interleukin-13 receptor subunit $\alpha 1$	•	3
Interleukin 23 receptor	•	3
Eythropoietin receptor	•	3
Granulocyte colony-stimulating factor receptor	•	3
Interleukin-10 receptor	•	3
Interleukin-12 receptor	•	3
Interleukin-7 receptor	•	3
Interleukin-15 receptor	•	3

Interleukin-6 receptor	•	3
Interleukin-27 receptor	•	3
Interleukin-3 receptor	•	2
Granulocyte macrophage colony-stimulating factor receptor	•	2
CREB binding protein	•	2
A-Raf proto-oncogene, serine/threonine kinase	•	1
RAS guanyl releasing protein 1	•	1
phosphoinositide-3-kinase regulatory subunit 3	•	1
signal transducer and activator of transcription 6	•	1
Bcl-2-like 1	•	1
mechanistic target of rapamycin kinase	•	1
Interferon γ receptor 1	•	1
protein tyrosine phosphatase non-receptor type 22	•	1

