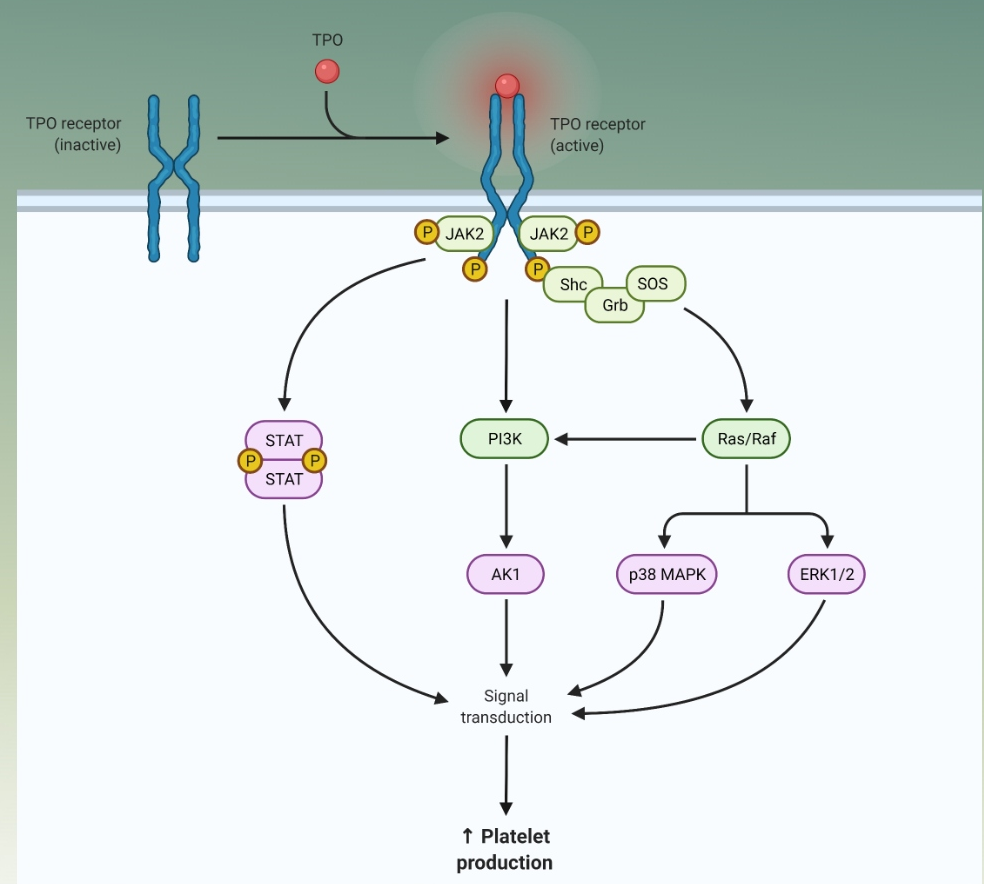


# Growth Factors and Cytokines Ligands

Cytokines are signal molecules that bind to the receptor proteins on the surface of immune system cells, provoking an immunological response. They include chemokines, interferons, interleukins, lymphokines, and tumor necrosis factors. Growth factors are important molecules for the regulation of a variety of cellular processes. These compounds stimulate cell proliferation, regeneration, and cell differentiation. Together cytokines and growth factors are weighty parts of the immune system's responses to infection, inflammation, trauma, sepsis, cancer and reproduction, becoming prominent pharmaceutical targets.

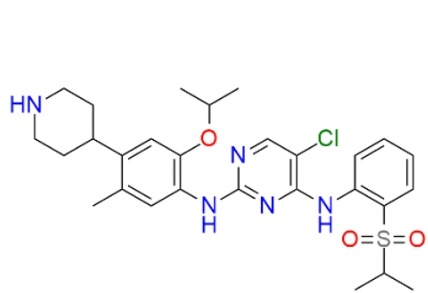
**Growth Factors and Cytokines Ligands Library** contains 414 small ligands, some representative molecules are given below: Ceritinib, ALK tyrosine kinase receptor inhibitor; Lucitanib, VEGFR and FGFR inhibitor; MSX-127, CXCR4 antagonist; Eltrombopag, Thrombopoietin receptor agonist.

**Related terms:** *epidermal growth factor, fms related receptor tyrosine kinase, kinase insert domain receptor, fibroblast growth factor, platelet derived growth factor*

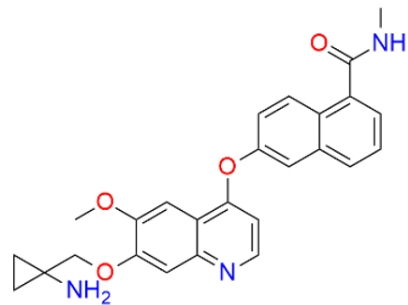


Biological action of cytokines on TPO receptor (Created by BioRender.com)

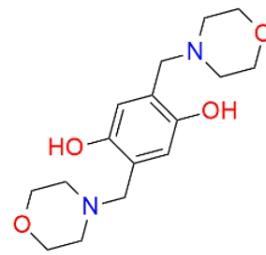
# Highlights



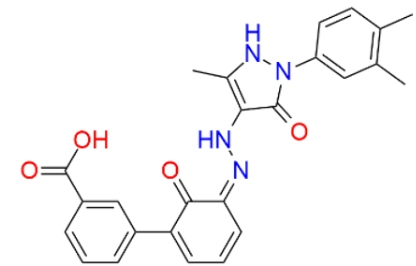
EBC-12909  
CAS: 1032900-25-6  
Ceritinib, ALK tyrosine kinase  
receptor inhibitor



EBC-50063  
CAS: 1058137-84-0  
Lucitanib, VEGFR and FGFR  
inhibitor



EBC-08714  
CAS: 6616-56-4  
MSX-127, CXCR4 antagonist



EBC-13607  
CAS: 496775-61-2  
Eltrombopag,  
Thrombopoietin receptor  
agonist

# Library Composition

Name	Occurrence in the library, times
epidermal growth factor receptor	43
fms related receptor tyrosine kinase 3	33
kinase insert domain receptor	29
fibroblast growth factor receptor 1	28
platelet derived growth factor receptor beta	26
platelet derived growth factor receptor alpha	25
colony stimulating factor 1 receptor	22
neurotrophic receptor tyrosine kinase 1	19
fibroblast growth factor receptor 2	18
fms related receptor tyrosine kinase 1	18
MET proto-oncogene, receptor tyrosine kinase	18

neurotrophic receptor tyrosine kinase 3	—	17
neurotrophic receptor tyrosine kinase 2	—	16
ALK receptor tyrosine kinase	—	16
erb-b2 receptor tyrosine kinase 2	—	16
Insulin receptor	—	15
Insulin-like growth factor I receptor	—	15
fibroblast growth factor receptor 3	—	15
fms related receptor tyrosine kinase 4	—	15
EPH receptor A2	—	14
erb-b2 receptor tyrosine kinase 4	—	13
fibroblast growth factor receptor 4	—	12
EPH receptor A7	—	10
EPH receptor B4	—	10

macrophage stimulating 1 receptor	—	9
EPH receptor A3	—	9
EPH receptor B1	—	9
EPH receptor A8	—	9
activin A receptor type 1	—	9
EPH receptor A1	—	8
EPH receptor A5	—	7
EPH receptor B2	—	7
EPH receptor A6	—	7
transforming growth factor beta receptor 1	—	7
EPH receptor B6	—	6
CXCR4	—	6
CXCR1	—	6

bone morphogenetic protein receptor type IB	●	5
transforming growth factor beta receptor 2	●	5
EPH receptor B3	●	5
activin A receptor type IB	●	5
activin A receptor type IL	●	4
erb-b2 receptor tyrosine kinase 3	●	4
CCR5	●	3
bone morphogenetic protein receptor type 2	●	2
S1P2 receptor	●	2
S1P1 receptor	●	2
S1P3 receptor	●	2
S1P4 receptor	●	2
S1P5 receptor	●	2

CCR2	•	2
receptor activator of NF-kappa B	•	2
CCR1	•	2
anti-Mullerian hormone receptor type 2	•	1
Interleukin-2 receptor	•	1
Thrombopoietin receptor	•	1
bone morphogenetic protein receptor type IA	•	1
death receptor 4	•	1
death receptor 5	•	1
activin A receptor type 2B	•	1
CXCR2	•	1
CCR3	•	1
Transforming growth factor $\beta$ receptor	•	1

CCR4

•

1

CCR7

•

1

CXCR3

•

1

ACKR3

•

1

Interferon  $\gamma$  receptor 1

•

1

Interleukin 21 receptor

•

1