Small Molecule Analysis Services

Stem Cell Culture Additives – Ancillary Materials

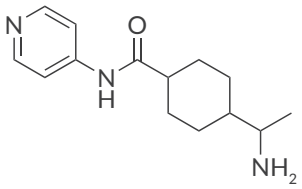
An expanding variety of small molecule modulators of cell proliferation and differentiation are used in research of disease mechanisms and potential treatments. For instance, some are essential in maintaining and expanding cultures of pluripotent stem cells, as well as in their differentiation to specific cell lineages with therapeutic potential. Many of these additives are used alone or in combination with others in cell culture, animal models of disease, and clinical trials. They are also used as ancillary materials for cell, gene, and tissue-engineered therapeutic and nutritional products. Therefore, the determination of their levels in samples is of interest to an increasing number of researchers and manufacturers. Cayman has developed an LC-MS/MS method for the quantitation of this type of additive and tested 14 of them in plasma or cell culture medium.

Analyte Coverage

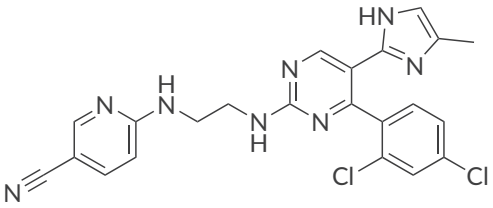
We offer an analytical service for any of the small molecule modulators of cell growth listed below, or for any combination of them, in plasma and cell medium. The method can easily be adapted to analyze any similar compounds, including their potential metabolites.

Item No.	Analyte	Modulator Type
10005583	Y-27632	ROCK inhibitor
10010559	HA-1077	ROCK inhibitor
10007653	H-1152	ROCK inhibitor
14794	ALK5 Inhibitor II	ALK5 inhibitor
10010399	SB-202190	p38 MAPK inhibitor
71740	Rosiglitazone	PPARγ agonist
13031	SB-431542	ALK4/5/7 inhibitor
13122	CHIR99021	GSK3 inhibitor
16679	DMH1	ALK2/3 inhibitor
10006292	Fingolimod	Prodrug of FTY720P, agonist of S1P receptors
13659	IWR-1-endo	Inhibitor of Wnt response
13197	DAPT	Inhibitor of Notch signaling
13342	SU 5416	Tyrosine kinase inhibitor
10009634	Purmorphamine	Agonist of Smo, activator of Hedgehog signaling

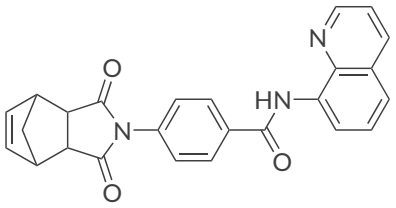
NOTE: The current chromatographic method does not resolve stereoisomers.



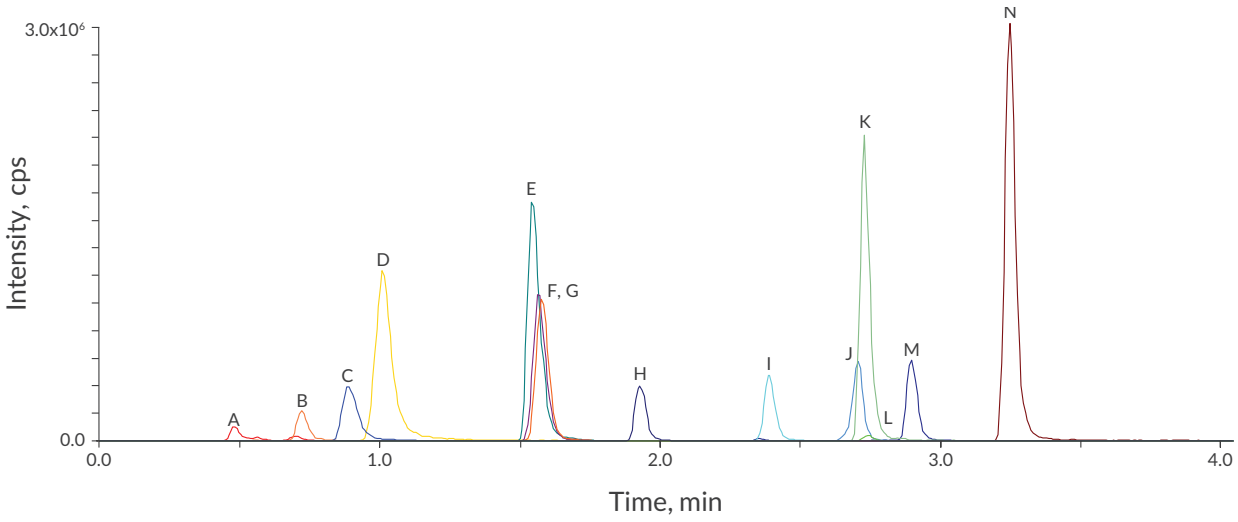
Y-27632



CHIR99021



IWR-1-endo



Label	Analyte
A	Y-27632
B	HA-1077
C	(S)-H-1152
D	ALK5 Inhibitor II
E	SB-202190
F	Rosiglitazone
G	SB-431542
H	CHIR99021
I	DMH1
J	Fingolimod
K	IWR-1-endo
L	DAPT
M	SU 5416
N	Purmorphamine

LC-MS chromatogram traces of 14 small molecule modulators extracted from complete cell culture medium supplemented with authentic standards (200 nM each).

Our Approach

We have optimized extraction and LC-MS methods for analysis of 14 underivatized cell culture reagents in plasma and cell medium. The methods can be adapted to include additional metabolites or to analyze other types of biological samples.

Our Advantages

- Our scientists are expertly trained and have decades of collective experience in the analysis, synthesis, and cell biology applications of small molecules.
- We use state-of-the-art instrumentation, reagents, and methods for all aspects of sample preparation, analyte extraction, LC-MS analysis, and data review to ensure consistent, high-quality data.
- The method is scalable, from pilot studies with a few samples to high-throughput studies with hundreds of samples.
- High-quality standards enable accurate calibration curve preparation and reliable quantitation.
- Collaborative, flexible approach. The method can be customized to include, remove, or substitute analytes, or to be used with most types of samples. Please inquire for specific details.

See How We Can Meet Your Specific Project Needs
Submit the Contact Us form at **www.caymanchem.com/analytical-chemistry**

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