"Synthesis of Novel Inhibitors of Protein N-terminal Methyltransferase" VCU #14-039

Applications

- Research tool for
  - Characterizing NTMT1 function and synthesis
  - Exploring mechanisms of NTMT1-involved diseases
- New synthesis platform to produce specific inhibitors of other classes of methyltransferases

Advantages

- Novel bisubstrate inhibitor that competitively binds both substrate sites
- potent and selective inhibition

Inventors

Rong Huang, Ph.D.
Gang Zhang, Ph.D.

Contact

Magdalena K. Morgan, Ph.D.
Licensing Associate
mkmorgan@vcu.edu
Direct 804-827-6095

Technology Summary

Researchers at Virginia Commonwealth University have produced a novel synthetic strategy to construct NAM-peptide conjugates via triazole and alkyl linkers. These compounds have been successfully shown to competitively inhibit both binding sites of the protein N-terminal methyltransferase 1 (NTMT1) offering an excellent tool in exploring mechanisms of NTMT1-involved diseases and determining NTMT1 function. These inhibitors have higher affinity to the enzyme due to the optimized linker length. Another advantage is its potent and selective inhibition due to its ability to mimic the enzyme's transition state. Figure 1 displays the inhibitory effects on methylation progression of RCC1-10 peptide by the proposed inhibitor at ranging concentrations.

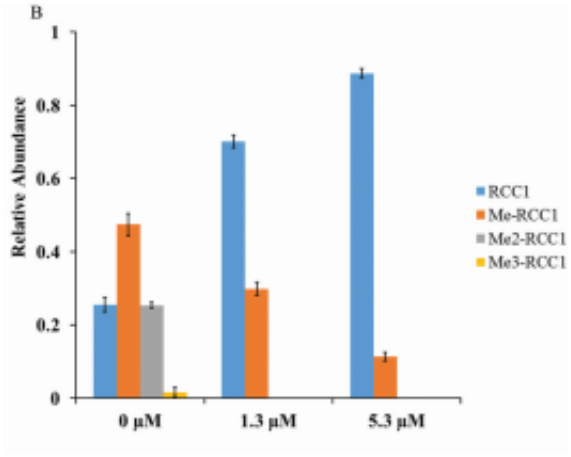

Fig 1 Quantification of methylation states of RCC1-10 as a result of NTMT1 inhibition by NAM-Tz-SPKRIA at 20 minutes.

Technology Status

Additional information about this technology has been published and can be found at the following link:
http://pubs.rsc.org/en/content/articlepdf/2015/ob/c5ob00120j

Patent Pending: U.S. and Foreign rights available.
This technology is available for licensing to industry for further development and commercialization.