

Targeting influenza virus-host cell interactions for drug discovery

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Viruses, parasites and bacteria utilise host cell resident carbohydrates, on many occasions sialic acids, and their own carbohydrate-recognising proteins to invade their host, facilitate their lifecycle and as a consequence produce disease. For example, a significant human health burden is observed annually for viruses such as influenza virus, rotavirus and parainfluenza virus and these viruses have essential carbohydrate recognition processes in their life cycles that provide possible drug discovery targets.¹⁻⁵

Our interest in these essential pathogen carbohydrate recognition processes have led us to explore, using a multidisciplinary approach, a number of sialic acid-recognizing proteins associated with various pathogens. Our work and advances towards a better understanding of these processes in the context of sialic acid recognition and influenza virus sialidase inhibitor development will be presented.⁶⁻⁸

1. Haselhorst, T. et al. Nat. Chem. Biol. 2009, 5, 91-93.
2. Haselhorst, T. et al. Angew. Chem. Int. Ed. 2011, 50, 1055-1058.
3. Rudrawar, S. et al. Nat. Commun. 2010, 1:113.
4. von Itzstein, M. Nat. Rev. Drug Discov. 2007, 6:967-974.
5. Guillon, P et al. Nat. Commun. 2014, 5:5268.
6. Rudrawar, S et al. Org. Biomed. Chem. 2013, 21:4820-4830.
7. Bhatt, B. et al. J. Med. Chem. 2012, 55:8963-8968.
8. Rudrawar, S. et al. Org. Biomol. Chem. 2012, 10:8628-8639.

