

Poster Presentation

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25 years of crystallographic studies related to HIV/AIDS

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This year we celebrate 25 years since the first crystal structures of HIV-encoded proteins became available. The structure of HIV protease, the first one to be determined, immediately became a guide for designing drugs directed at this enzyme crucial to viral maturation, with several drugs gaining approval in a record time of 6 years. The structures of the other HIV enzymes (reverse transcriptase, RNase H, and integrase) followed and all were immediately useful to drug developers. Other HIV-encoded proteins that control membrane fusion, viral entry, and regulatory processes were also pursued, together with host proteins that are involved in maintaining viral life-cycle. This large body of structural knowledge was crucial to the development of multi-drug therapy that changed the face of the AIDS epidemic from an irrevocably mortal disease to a manageable infection. The history of these 25 years of world-wide crystallographic efforts is worth recounting.

Keywords: Human Immunodeficiency Virus (HIV), Structure-assisted Drug Design