Design and synthesis of Purine-Quinolone Hybrids for Targeting Kinases

IITM Technology Available for Licensing

Problem Statement

- In the present era, **abnormalities in kinase** function are linked with many diseases such as **cancer, inflammation, bipolar disorders, neurodegenerative disorders**, & **cardiovascular disorders.**
- This makes **kinases,** as one of the most important drug targets against said disease. Further, a few prior arts have discussed & found that only antibody-based approaches have reached the level of clinical development & **no small-molecule-based drug** that acts by targeting IL17 release is **available**. Hence, there is a need to mitigate above challenges.

Technology Category/ Market

Technology: Purine-Quinolone Hybrids for Targeting Kinases**; Industry:** Manufacturing /Chemical, Pharmaceutical, **Applications:** Food & Pharma, Anti cancer drug development.

Market: The global **Quinolones** market size is projected $**69.4B** at a **CAGR** of **4.5%** during 2023-**2030.**

Intellectual Property

IITM IDF Ref.:1255; Patent No. 355534

TRL (Technology Readiness Level)

TRL- 3, Proof of Concept, Tested & validated

Research Lab

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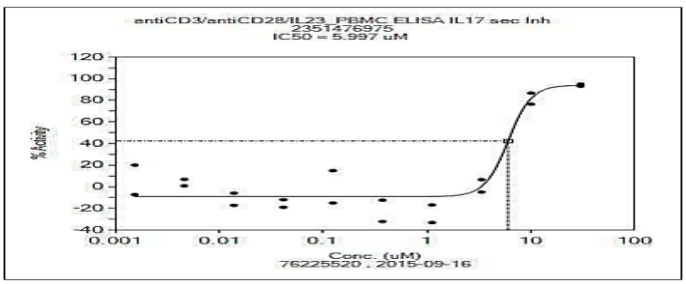
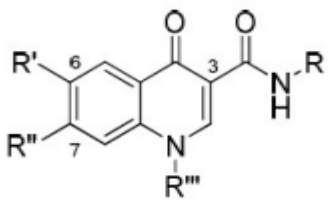
Image



Technology

- Present invention describes a novel **purine-quinolone compounds** that have the ability to bind both **the adenine binding pocket** and **phosphate binding region together** and at the same time **suppress the secretion of IL17.**
- Further present invention describes **purine-quinolone hybrids** with **potential ability** to **target kinases** which are **well-recognized therapeutic targets** against **cancer and other proliferative diseases.**



wherein **R=** hydrogen, alkyl, aryl, arylalkyl, heteroaryl, amino acids or peptides introduced through amide bonds;
R'= hydrogen, halogen, NO2, NH2, NHR"", NR"" where R"" = alkyl, aryl, arylalkyl, heteroaryl, amino acids or peptides introduced through amide bonds;
R''= hydrogen, purines, other aromatic and heterocyclic systems;
R'''= hydrogen, alkyl, aryl, arylalkyl groups.

Key Features

1. The **quinolone derivatives** of said present invention are presented herewith:
a)purine moiety on aryl ring,
b)carbonyl group at C4, and
c)other substituents.
2. Said compound is **effective against diseases** arising from irregularities associated with **kinase function and/or IL17 signaling.**

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