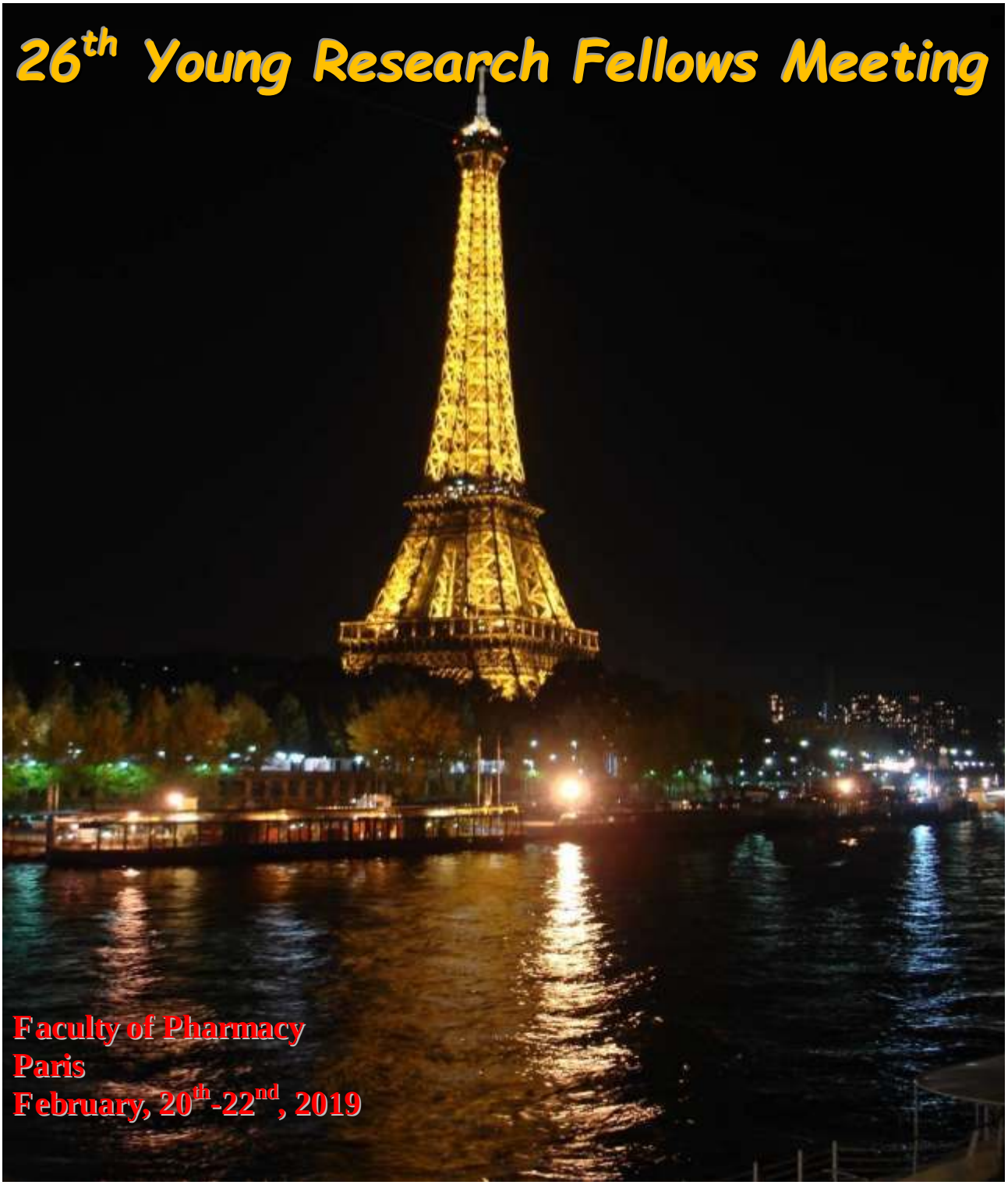
26th Young Research Fellows Meeting



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POSTER ABSTRACT

Synthesis and biological evaluation of 3-substituted 2-oxindole derivatives as new glycogen synthase kinase 3β inhibitors

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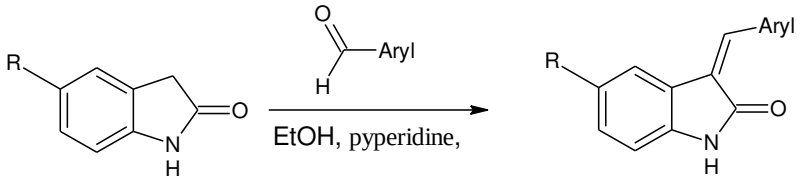
PO 020

A number of novel glycogen synthase kinase 3*б* *(*GSK-3*б)* inhibitors with promising activity were synthesized using the 3-arylidene-2-oxindole scaffold. The lead compound (**1**) was shown to inhibit GSK-3*б* with IC_{50} 4.19 nM. with moderate cytotoxity in a cell-based assay. Compound **1** was evaluated in oral glucose tolerance test in rat model of type 2 diabetes mellitus and demonstrated significant antidiabetic effect. The results attest to the potential for further development of **1** as a therapeutic agent for treatment of diabetes[1,2] and cancer[3,4].



43 - 99 %

Compound	R	Ar	Yield %	% Inhibition at 10 μM	IC_{50} (μM)
1	H	2-pyridyl	79	95.70	0.00419
2	BzNH	4-OH-Ph	99	58.94	4.343
3	$CH_3C(O)NH$	3,4,5-tri-MeO-Ph	43	84.16	0.2329
4	MeOC(O)NH	4-OH-Ph	44	91.82	0.1554
5	MeOC(O)NH	4-NO_2-Ph	49	69.29	0.3479

Bibliographic references:

1. *Biochemical Pharmacology, 2013, Vol. 86, no 2, P. 191-199.*
2. *Diabetes*, 2002, Vol. 51, no 10, P.2903-2910.
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4. *ACS Chemical Biology,* 2014, Vol. 9, no 2, P.353-358.

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