analysis. Compound **1** demonstrated good *in vitro* activity against WHCO1 oesophageal cancer cell lines (IC_{50}=6.6 μM) compared to cisplatin which had an IC_{50}=13 μM for the same test.

[1] This compound also exhibited exhibited selective *in vitro* inhibition against HIV-1 integrase enzymes with IC_{50} < 25 μg/ml. These results highlight the potential of halogenated monoterpenes as important leads in the development of new pharmaceuticals.

References:

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IMMUNOASSAY AS ANALYTICAL METHOD IN PHARMACOKINETIC AND TOXICOKINETIC INVESTIGATIONS

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Pharmacokinetic and toxicokinetic investigations are obligatory parts of preclinical studies for new drug development. Quantification of active substances in biological samples (plasma, tissues, organs, etc.) is necessary for further pharmacokinetic parameters evaluation. Chromatographic methods (HPLC-UV/FL/MS, GC-MS) are commonly used for these purposes. But they are not suitable for determination of some types of analytes, especially for immunodrugs with peptide and protein nature. Immunoassay methods may be more simple, sensitive and useful in such cases, but they need special kits for each analyte.

The aim of the present work was validation and application of immunoassays for pharmacokinetic study of darbepoetin alfa and toxicokinetic study of peginterferon alfa 2a.

Quantification of darbepoetin alfa in rabbit plasma samples was done with commercial reagent kit "Erytropoetin-IFA-Best" (Vector-Best, Russia); peginterferon alfa 2a analysis was done with kit "alfa-Interferon-IFA-Best" (Vector-Best, Russia).

Possibility of one special kit application to quantification to analytes erytropoetin/ darbopoetin, alfa-Interferon/peginterferon was shown for both pairs; application correctness for kits for human plasma to animal plasma (rabbit) was proved; assays were validated in linear ranges 67–2000 pg/ml (darbopoetin) and 41–600 pg/ml (peginterferon) according to modern requirements. Pharmacokinetic parameters for "Aranesp, solution for injections 100 μg/ml" (Amgen Europe B.V., Netherlands) were evaluated after single administration and subcutaneous administration to rabbits (Table) in therapeutic doses (1 mg/kg). Pharmacokinetic/toxicokinetic parameters for "Pegasis, solution for subcutaneous introduction 180 μg/0.5 ml" (Hoffman-la-Roche, Switzerland) were evaluated after subcutaneous adminiatrstion to rabbits in high dose (6 mg/kg≈20 therapeutic doses) (Table).

Thus, immunoassays based on commercial kits intended to analyte similar to target after additional validation may be successfully used for parmaco- and toxicokinetic application.

Table. Main pharmacokinetic/toxicokinetic parameters of darbopoetin and peginterferon

Administration	Cmax, pg/ml	AUC_{0-t}, h·pg/ml	MRT, h	T ½, h
Dapbopoetin alfa (t=24h)				
Intravenous	46839±12464	341924±102390	7.77±0.49	5.38±0.34
Subcutaneous	5348±1102	173637±39045	25.2±3.20	17.69±1.87
Peginterferon alfa 2a (t=72 h)				
Subcutaneous	3235±860	167711±35255	121.6±24.3	79.4±2.23