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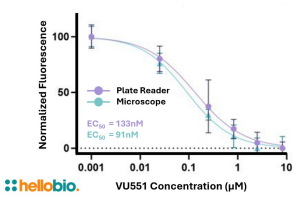
DATASHEET

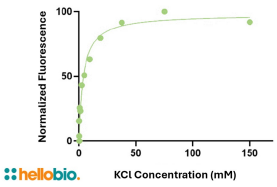
IPG-4 AM

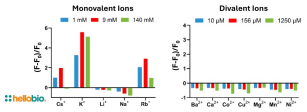
Product overview

Name	IPG-4 AM
Cat No	HB6781
Alternative names	Asante Potassium Green, Ion Potassium Green, APG, IPG, APG-4, IPG-4
Biological description	Membrane permeable potassium indicator (Excitation 525nm, Emission 545nm) which is compatible with a wide variety of detectors (e.g. fluorescent microscopes, plate readers, flow cytometers, and fluorescent indicator-doped solid-state sensors). Can be used with common filter sets (e.g. YFP and FITC) and multiphoton approaches. Higher affinity for potassium (K_d = 7mM) compared to IPG-2 (K_d = 18mM) Suitable for diverse applications such as extracellular K^+ sensing and monitoring intracellular K^+ dynamics. Synthetic fluorochrome which incorporates a K^+-binding moiety. Under conditions where K^+ is not bound, the fluorescence of the sensor is significantly quenched. When K^+ is bound, the quenching is relieved, and the fluorescence of the sensor dramatically increases. Additionally IPG-4 is not a MDR1 (pgp) substrate therefore is compatible with probenecid free assays.
Applications	fluorescence imaging, live cell imaging
Purity	>95%
Description	Yellow-green fluorescent potassium indicator. Membrane permeable. Higher affinity than IPG-2.

Images







Biological Data

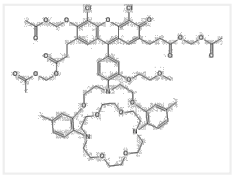
Application notes	Please follow our IPG-4 AM Protocol

Solubility & Handling

Storage instructions	-20°C
Solubility overview	DMSO
Handling	This compound is light sensitive; exposure to light may affect compound performance. We therefore recommend storing the solid material and any solutions in the dark and protecting from light.
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

Chemical Data

Chemical name	acetyloxymethyl 3-[3-(acetyloxymethoxy)-7-[3-(acetyloxymethoxy)-3-oxopropyl]-4,5-dichloro-9-[4-(5,17-dimethyl-8,14,24,27,32,35-hexaoxa-1,11,21-triazatetracyclo[19.8.8.02,7.015,20]heptatriaconta-2(7),3,5,15(20),16,18-hexaen-11-yl)-3-(2-methoxyethoxy)phenyl]-6-oxoxanthen-2-yl]propanoate
Molecular Weight	1333.3

Chemical structure	
Molecular Formula	$C_{67}H_{79}Cl_2N_3O_{21}$
CAS Number	3019514-72-5
PubChem identifier	163342041
SMILES	ClC1=C2C(C(C3=CC(OCCOC)=C(N(CCOC4=C(N5CCOCCOCCN6CCOCCOCC5)C=CC(C)=C4)CCOC7=C6C=CC(C)=C7)C=C3)=C(C=C8CCC(OCOC(C)=O)=O)C(O2)=C(Cl)C8=O)=CC(CCC(OCOC(C)=O)=O)=C1OCOC(C)=O
InChiKey	ORCBRKCLNTYBFH-UHFFFAOYSA-N
Appearance	Solid
Excitation	525 nm
Emission	545 nm

References

Calibration and characterization of intracellular Asante Potassium Green probes, APG-2 and APG-4.

Rana PS et al (2019) Analytical biochemistry 567

PubMedID 30503709

Inadequate brain glycogen or sleep increases spreading depression susceptibility.

Kilic K et al (2018) Annals of neurology 83

PubMedID 29244233

Imaging extracellular potassium dynamics in brain tissue using a potassium-sensitive nanosensor.

Wellbourne-Wood J et al (2017) Neurophotonics 4

PubMedID 28217712