BioActs Co., Ltd.
9, Cheongneung-daero 595beon-gil, Namdong-gu, Incheon 21666, Korea
Tel: +82-32-818-9100, Fax: +82-32-818-8206
www.bioacts.com • technical@bioacts.com

Product Data Sheet

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1. Product Information

- Product Name : BBBFlamma® AD
- Catalog Number : BAJ1001
- Appearance : Purple Solid
- Storage Conditions : Protect from Light at -20 ℃

2. Additional Information

- Molecular Weight : 529.24 g/mol
- Purity : 99.7%
- Excitation $_{Max}$: 570 nm
- Emission $_{Max}$: 650 nm

3. Description

This curcumin derivative has excellent selective binding force on beta-amyloids. Therefore, it can be used in that detect beta-amyloids through optical imaging or photoacoustic imaging methods. Especially, since the photoacoustic signals can be detected at high efficiency with little noise in response to light irradiation at certain wavelengths, the curcumin derivative can be useful as a product for detection of beta-amyloid and diagnosis of diseases caused by beta-amyloid overproduction.

4. Imaging Protocol

I. *In vivo* NIR fluorescence imaging

1. Prepare female 5X FAD transgenic mice and age-matched wild-type littermates aged 15 months.
2. To avoid problems caused by light scattering due to the fur, shave the animals.
3. Anesthetize the animals using 1.5% isoflurane in nitrous oxide/ oxygen, 2:1.
4. Administer the probe into the tail vein at 0.4 mg/kg (20% DMSO, 30% propylene glycol, 50% 1X PBS).
5. Record NIR fluorescence images every 5, 10, 20, 30, 40, 50, 60, 90, 120 and 180 min after dye administration.
6. Conduct optical data acquisition and analysis using the Maestro 2.0 in vivo imaging system, which consists of a light-tight box equipped with a 150 W halogen lamp and a 570 nm excitation filter.
7. Detect the fluorescence by a CCD camera equipped with a C-mount lens and an emission filter (650 nm long pass).

II. *Ex vivo* and histological imaging

1. Prepare female 5X FAD transgenic mice and age-matched wild-type littermates aged 15 months.
2. Anesthetize the animals using 1.5% isoflurane in nitrous oxide/ oxygen, 2:1.
3. Administer the probe into the tail vein at 0.4 mg/kg (20% DMSO, 80% propylene glycol, 50% 1X PBS).
4. After 30 min, sacrifice the mice, and remove the brain and freeze it in powdered dry ice.
5. Acquire fluorescence images of the brains with a Maestro 2.0 in vivo imaging system, which consists of a light-tight box equipped with a 150 W halogen lamp and a 570 nm excitation filter.
6. Detect the fluorescence by a CCD camera equipped with a C-mount lens and an emission filter (650 nm long pass).
7. Perfuse the brain with 4% formaldehyde, excise and embed in optimum cutting temperature compound (OCT).
8. For microscopy, slice the brains into 25 μm slices, and equilibrate each slice for 5 min and cover it with mounting media.