Supporting Information

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Biodistribution of cyclo(-Arg-Gly-Asp-D-Phe-Cys)-Qdots

To investigate the biodistribution of cyclo(-Arg-Gly-Asp-D-Phe-Cys)-Qdots [cyclo(RGDfC)-Qdots], three male NMRI (nu/nu) mice were anesthetized by i.p. injection of a mixture of ketamine (150 mg/kg) and xylazine (10 mg/kg). After warming the tail in water of ~50 °C, Qdots were injected into the lateral tail vein. The amount of injected Qdots was 200 pmol in a volume of 100 μL of PBS. After 1 h, the mice were killed by cardiac puncture to remove a large portion of blood from circulation and obtain a blood sample. Subsequently, organs were removed, washed in PBS, and weighed. Whereas the animals' eyes were enucleated as a whole and not further dissected, representative portions of the other organs were used for further analysis. All tissues were dissolved by microwave-assisted nitric acid digestion using a MARSXpress system (CEM) and subsequently investigated for their cadmium content, which correlates quantitatively with the number of Qdots in the tissue. The cadmium-111 concentration of samples was determined using inductively coupled plasma mass spectrometry measurements with an ICP-MS 7700cx (Agilent Technologies).

The total injected dose (ID) was determined by adding together the cadmium mass of all organs. The total blood volume was estimated to be 80 mL/kg (1). All data were calculated as %ID per gram of tissue (%ID/g_{tissue}). The average mass of an enucleated mouse eye (m_{eye}) and the mass of the respective choroid ($m_{choroid}$) was known from previous independent experiments to be 26.4 mg ± 1.85 mg and 1.75 mg ± 0.27 mg, respectively (n = 8). From these data and the cadmium content in the animals' eyes (%ID/g_{eye}), the cadmium content in the choroid (%ID/$g_{choroid}$) was calculated according to the following equation:

$$\%\mathrm{ID}/g_{\mathrm{choroid}} = \frac{m_{eye}}{m_{choroid}} \cdot \%\mathrm{ID}/g_{\mathrm{eye}}.$$

The SEM was calculated according to Gauss' law of error propagation. The complete set of data obtained is shown in Table S1. The majority of Qdots were found in the liver and spleen because they are the main organs of the mononuclear phagocyte system. Thirteen percent ID/g_{tissue} Qdots still circulated in the blood after 1 h. The Qdot content in the choroid was comparable with the amount in the lung and significantly higher than in the kidney and heart.

1. Barbee RW, Perry BD, Ré RN, Murgo JP (1992) Microsphere and dilution techniques for the determination of blood flows and volumes in conscious mice. *Am J Physiol* 263(3 Pt 2):R728–R733.

Table S1. Tissue distribution of cyclo(RGDfC)-conjugated Qdots

Tissue	% injected dose/g_{tissue}
Blood	13.3 ± 7.4
Liver	31.1 ± 10.9
Spleen	19.5 ± 9.3
Lung	4.4 ± 0.7
Kidney	1.6 ± 0.7
Heart	1.5 ± 0.7
Eye	0.2 ± 0.03
Choroid	3.3 ± 0.7

Cyclo(RGDfC)-Qdots content in selected organs as analyzed by inductively coupled plasma mass spectrometry 1 h after injection into mice. Whereas the content in the kidney and heart is statistically significantly lower than in the choroid (t test, $P < 0.05$), there is no statistically discernible difference between the values for lung and choroid (t test, $P > 0.05$).