The cover picture shows that perfluorotripropylamine (FC-3283), a kind of perfluorocarbon as an oxygen carrier, is encapsulated in a copolymer using polyethylene glycol (PEG) to modify poly lactic-co-glycolic acid (PLGA) to prepare a PLGA-PEG/FC-3283 emulsion for highly efficient reoxygenation to cell. Because of the oxygen carry and release ability of PLGA-PEG/FC-3283 emulsion, the cell viability increased significantly through PLGA-PEG/FC-3283 emulsion administration after the cells treated with hypoxia. More details are discussed in the article by Zhu et al. on page 38—43.

FULL PAPERS

31 Multifunctional Lymph-Targeted ZnO:Gd@Hyaluronic Acid Nanospheres: Preparation and Application in Tumor Diagnose

Jiajun Cheng, Huajuan Zhang, Jiong Zhu, Lijun Qian, Qing Lu, Guangyu Wu, Jianrong Xu,* Jun Zhu*

A novel multi-modal lymph-targeted contrast agent of ZnO:Gd@ hyaluronic acid nanospheres with 19% of quantum yield and 5.8 mM \(^{-1}\)s \(^{-1}\) of relaxivity is prepared by Gd dopped ZnO quantum dot grafting by hyaluronic acid molecule and used for in vivo lymphoma magnetic resonance imaging.
Preparation of Perfluorocarbon Emulsion and Its Application in Cells Re-oxygenation

Zhengfeng Wen, Rui Liu, Fan Yi, Yanjie Yao, Jun Guan, Dannong He,* Jun Zhu,* Zhaofen Lin*

Poly lactic-co-glycolic acid-polyethylene glycol (PEG)/perfluorotripropylamine emulsion is prepared by emulsification of a copolymer of PEGylated poly lactic-co-glycolic acid and applied as an oxygen carrier to supply oxygen during a model hypoxia/reoxygenation of HCT 116 cells with liquid paraffin.

Peroxidase-Like Properties of Multiple Nano-Metallic Oxides under Various Conditions

Ting Liu, Kunfeng Zhao, Linyu Jin, Jun Zhu, Yamei Dong, Yinan Yan, Ping Wang,* Dannong He*

By changing the reaction conditions such as the amounts of nano-metallic oxides, pH value, the concentration of H$_2$O$_2$, reaction time, and so on, the peroxidase-like characteristics of all six nano-metallic oxides were probed.

Iodobenzene Dicarboxylates as Transferrable Oxygen Sources: Synthesis of α-Oxygenated Ketones from Terminal Aryl Alkynes

Bao-Yi Ren,* Daokun Zhong, Nan Guo, Weikun Duan, Shuai Song, Xue Yang

A facile and efficient method for preparation of α-oxygenated ketones has been developed via the reaction of terminal aryl alkynes with various iodobenzene dicarboxylates. The protocol represents a direct, atom-efficient and metal-free conversion of alkynes into α-oxygenated ketones under mild conditions.

Degree of Conversion, Bond Strength and Biocompatibility of the APTES@SiO$_2$ Strengthened Experimental Dental Adhesive

Bin Zhang, Juan Zhou,* Peicheng Xu, Ziyuan Zhu, Jun Zhu, Wenhao Qian,* Dannong He*

The nano silica was modified and then dispersed in the adhesive (a), which resulted in a highly increased degree of conversion (DC) of the adhesive (b) and the improved penetration into the dentin tubules (c).