

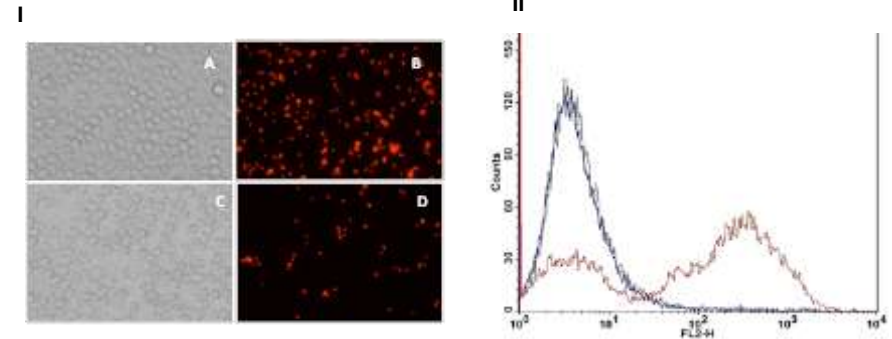
# EZ-Red™ Zymosan A Fluorescent Particles

**CATALOG NO:** M1204-500 500 µl  
**ALTERNATIVE NAMES:** Zymosan, Zymosan A  
**SOURCE:** *Saccharomyces cerevisiae*  
**FORM:** Liquid  
**FORMULATION:** 1 mg/ml solution in PBS

**STORAGE CONDITIONS :** Store at 4°C. Stable for at least one year as supplied. Avoid freezing of the particles. If needed, briefly sonicate for 3-10 s before use.

**APPLICATIONS AND USAGE:** BioVision's EZ-Red™ Zymosan A particles can be directly used to induce phagocytosis and screening phagocytosis inhibitors by fluorescent imaging, microplate reader and flow cytometry. We recommend using 5 µl of EZ-Red™ Zymosan A Fluorescent Particles for 5 x 10<sup>5</sup> of viable cells. If required, solution can be further diluted up to 0.1 mg/ml with PBS before use. However, the optimum amount of particles must be empirically determined for each case. For detail protocol, please refer BioVision's EZCell™ Phagocytosis Assay Kit (Red Zymosan A) (**Cat. No. K398**).

**BACKGROUND:** Zymosan is a glucan with repeating glucose units connected by β-1,3-glycosidic linkages. It binds to TLR 2. Zymosan is a ligand found on the surface of fungi, like yeast. Zymosan is prepared from yeast cell wall and consists of protein-carbohydrate complexes. It is used to induce experimental sterile inflammation. In macrophages, Zymosan-induced responses include the induction of proinflammatory cytokines, arachidonate mobilization, protein phosphorylation, and inositol phosphate formation. Zymosan A also raises cyclin D2 levels suggesting a role for the latter in macrophage activation besides proliferation. It potentiates acute liver damage after galactosamine injection suggesting that certain types of non-parenchymal cells other than Kupffer cells are involved in Zymosan action. Phagocytosis in mammals serves as an important first line defense mechanism against invading pathogens. It is also essential for continuous clearance of dying cells, tissue remodeling, and acquisition of nutrients for some cells. Phagocytosis is a specific form of endocytosis initiated by recognition and binding of foreign particles by cell surface receptors, followed by their engulfment, and formation of phagosomes. Maturing phagosomes transform to phagolysosomes which destroy the pathogen through enzymes and toxic peroxides. Zymosan prepared from yeast cell wall (*Saccharomyces cerevisiae*), and consisting of protein-carbohydrate complexes is frequently used as a pathogen in phagocytosis assays. BioVision's EZ-Red™ Zymosan A particles was prepared by conjugating Zymosan A particles with a bright red fluorescent molecular probe. Special care was taken to remove non-reacted dye from the conjugated particles. EZ-Red™ Zymosan A particles are ready-to-use phagocytosis-inducing particles for fluorescent imaging (red), microplate reader (Ex. 540, Em. 570 nm) and flow cytometric analysis of phagocytosis.



**Fig.:** BioVision's EZ-Red™ Zymosan A Fluorescent particles were used to induce phagocytosis in J774 macrophages in the absence and presence of a cell-permeable and potent inhibitor of actin polymerization, Cytochalasin D (20 µM).

**(I) Fluorescent Microscopy:** Bright field (A and C) and Green fluorescent image (B and D) of Macrophages treated with EZ- Red™ Zymosan A Fluorescent Particles in the presence (C and D) and absence (A and B) of Cytochalasin D.

**(II) Flow Cytometry:** Untreated Control cells (Black line); Macrophages treated with EZ-Red™ Zymosan A Fluorescent Particles in the absence (Red line) and presence (Blue line) of Cytochalasin D.

**RELATED PRODUCTS:**

- EZ-Green™ Zymosan A Fluorescent Particles (**Cat. No. M1203**)
- EZ-Red™ *E. coli* Fluorescent Particles (**Cat. No. M1202**)
- EZ-Green™ *E. coli* Fluorescent Particles (**Cat. No. M1201**)
- EZCell™ Phagocytosis Assay Kit (Green Zymosan) (**Cat. No. K397**)
- EZCell™ Phagocytosis Assay Kit (Red Zymosan) (**Cat. No. K398**)
- EZCell™ Phagocytosis Assay Kit (Green *E. coli*) (**Cat. No. K963**)
- EZCell™ Phagocytosis Assay Kit (Red *E. coli*) (**Cat. No. K964**)

**For Research Use Only! Not to be used in humans.**