

OxiSelect ORAC Activity Assay Kit

OxiSelect ORAC Activity Assay Kit

CATALOG #
AAA11432

PRODUCT SYNONYMS

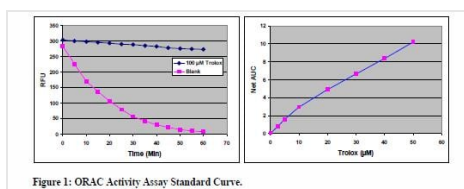
OxiSelect ORAC Activity; OxiSelect ORAC Activity Assay Kit; OxiSelect ORAC Activity assay kit

PRODUCT SPECIFICATIONS

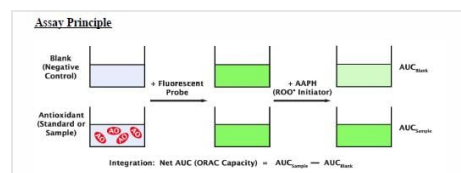
Preparation and Storage

Upon receipt store the Fluorescein Probe (100X), Antioxidant Standard, and Free Radical Initiator frozen at -20 degree C, and Assay Diluent at 4 degree C. Aliquot as necessary to avoid multiple freeze/thaws. Store all remaining kit components at room temperature until their expiration dates.

IMAGES



Application Data



Application Data

ADDITIONAL INFORMATION

Related Product Information for OxiSelect ORAC Activity assay kit

Background: Oxidative stress is a physiological condition where there is an imbalance between concentrations of reactive oxygen species (ROS) and antioxidants. However, excessive ROS accumulation will lead to cellular injury, such as damage to DNA, proteins, and lipid membranes. The cellular damage caused by ROS has been implicated in the development of many disease states, such as cancer, diabetes, cardiovascular disease, atherosclerosis, and neurodegenerative diseases. Under normal physiological conditions, cellular ROS generation is counterbalanced by the action of cellular antioxidant enzymes and other redox molecules. Because of their potential harmful effects, excessive ROS must be promptly eliminated from the cells by this variety of antioxidant defense mechanisms. Antioxidants include both hydrophilic and lipophilic molecules for metabolizing ROS. Although the products of ROS-induced oxidative stress are extensively used to monitor the effects of oxidative stress, it is also important to evaluate the antioxidant capacity of biological fluids, cells, and extracts. The Oxygen Radical Antioxidant Capacity (ORAC) Assay is a classic tool for measuring the antioxidant capacity of biomolecules from a variety of samples. The ORAC Activity Assay is based on the oxidation of a fluorescent probe by peroxy radicals by way of a hydrogen atom transfer (HAT) process. Peroxy radicals are produced by a free radical initiator, which quenches the fluorescent probe over time. Antioxidants present in the assay work to block the peroxy radical oxidation of the fluorescent probe until the antioxidant activity in the sample is depleted. The remaining peroxy radicals destroy the fluorescence of the fluorescent probe. This assay continues until completion, which means both the antioxidant's inhibition time and inhibition percentage of free radical damage is a single value. The sample antioxidant capacity correlates to the fluorescence decay curve, which is usually represented as the area under the curve (AUC). The AUC is used to quantify the total peroxy radical antioxidant activity in a sample and is compared to an antioxidant standard curve of the water soluble vitamin E analog Trolox™ (see Assay Principle below). OxiSelect™ ORAC Activity Assay is a fast and reliable kit for the direct measurement of ORAC antioxidant capacity from cell lysate, plasma, serum, tissue homogenates, and food extracts. Each kit provides sufficient reagents to perform up to 192 assays, including blanks, antioxidant standards and unknown samples. The assay is designed for use in single plate microplate readers as well as readers with high-throughput capabilities. Please read the complete kit insert prior to performing the assay.

Product Categories/Family for
OxiSelect ORAC Activity assay kit

[Oxidative Stress/Damage](#); [Antioxidant Assays](#); [Antioxidant Capacity Assays](#); [ORAC \(Oxygen Radical Antioxidant Capacity\) Assay](#)

References

1. Ames, B.N., Shigenaga, M.K., and Hagen, T.M. (1993) Proc. Natl. Acad. Sci. USA 90: 7915-7922.
 2. Cao, G., and Prior, R. (1999) Methods Enzymol. 299: 50-62.
 3. Huang, D., Ou, B., Hampsch-Woodill, M., Flanagan, J., and Prior, R. (2002) J. Agric. Food Chem. 50: 4437-4444.
 4. Huang, D., Ou, B., & Prior, R. (2005) J. Agric. Food Chem. 53: 1841-1856.
 5. Ou, B., Hampsch-Woodill, M., and Prior, R. (2001) J. Agric. Food Chem. 49: 4619-4626.
 6. Rice-Evans, C., and Miller, N.J. (1994) Methods Enzymol. 234: 279-293.
- Trolox is a trademark of Hoffman-LaRoche
1. Yang, J. et al. (2014). Validation of Genome-Wide Association Study (GWAS)-Identified Disease Risk Alleles with Patient-Specific Stem Cell Lines. Hum Mol Genet. 23:3445-3455.
 2. Ungvari, Z. et al. (2012). Testing Predictions of the Oxidative Stress Hypothesis of Aging Using a Novel Invertebrate Model of Longevity: The Giant Clam (*Tridacna Derasa*). J Gerontol A Biol Sci Med Sci. 10.1093/gerona/gls159.
 3. Bailey-Downs, L.C. et al. (2011). Liver-Specific Knockdown of IGF-1 Decreases Vascular Oxidative Stress Resistance by Impairing the Nrf2-Dependent Antioxidant Response: A Novel Model of Vascular Aging. J. Gerontol A Biol Sci Med Sci. 10.1093/gerona/glr164.
 4. Ungvari, Z. et al. (2011). Extreme Longevity Is Associated With Increased Resistance to Oxidative Stress in *Arctica islandica*, the Longest-Living Non-Colonial Animal. J. Gerontol A Biol Sci Med Sci. 10.1093/gerona/glr044
 5. Ungvari, Z. et al. (2011). Free Radical Production, Antioxidant Capacity, and Oxidative Stress Response Signatures in Fibroblasts from Lewis Dwarf Rats: Effects of Life Span-Extending Peripubertal GH Treatment. J. Gerontol. A Biol Sci Med Sci. 10.1093/gerona/glr004.

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

AAA Biotech | Tel: +1 (619) 604-9440 | Fax: +1 (619) 604-9441 | contact@aaabiotech.com

Online datasheet: <https://stage.aaabiotech.com/assay-kits/oxiselect-orac-activity/11432>