

## Product datasheet

# Free Fatty Acid Assay Kit - Quantification ab65341

★★★★★ [1 Abreviews](#) [252 References](#) [5 Images](#)

### Overview

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<b>Product name</b>	Free Fatty Acid Assay Kit - Quantification
<b>Detection method</b>	Colorimetric/Fluorometric
<b>Sample type</b>	Cell culture supernatant, Urine, Serum, Plasma, Other biological fluids, Tissue Extracts, Cell Lysate
<b>Assay type</b>	Quantitative
<b>Sensitivity</b>	> 2 $\mu$ M
<b>Assay time</b>	0h 60m
<b>Product overview</b>	Free Fatty Acid Assay Kit ab65341 uses a convenient, sensitive enzyme-based method for detecting long-chain free fatty acids in various mammalian and other samples, such as serum, plasma and other body fluids, food, growth media, etc.

In the free fatty acid assay protocol, fatty acids are converted to their CoA derivatives (coenzyme A), which are subsequently oxidized, leading to formation of color/ fluorescence. Fatty acids can then be easily quantified by either colorimetric ( $\lambda = 570$  nm) or fluorometric (Ex/Em = 535/587 nm) methods. Palmitic acid is used to generate a standard curve.

Free fatty acid assay protocol summary:

- add samples and standards to wells
- add reaction mix and incubate for 30 min at 37°C
- analyze with microplate reader

**Δ Note: Assay time does not include preparation of the samples.**

**Chinese protocol available.** See protocols section below.

<b>Notes</b>	<p>This product is manufactured by BioVision, an Abcam company and was previously called K612 Free Fatty Acid Quantification Colorimetric/Fluorometric Kit. K612-100 is the same size as the 100 test size of ab65341.</p> <p>This assay detects C-8 (octanoate) and longer fatty acids.</p> <p>Review our <a href="#">Metabolism Assay Guide</a> to learn about assays for metabolites, metabolic enzymes, mitochondrial function, and oxidative stress, and also about how to assay metabolic function in live cells using your plate reader.</p>
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## How other researchers have used Free Fatty Acid Assay Kit ab65341

This Free Fatty Acid assay kit has been used in publications in a variety of sample types, including:

- Human: cell culture lysates<sup>1</sup>, serum<sup>2</sup>
- Mouse: plasma and liver tissue<sup>3</sup>, serum<sup>4</sup>, plasma<sup>5</sup>, heart tissue<sup>6</sup>, liver<sup>7</sup>
- Rat: serum<sup>8</sup>, plasma<sup>9</sup>, cytosol of articular chondrocyte primary cell cultures<sup>10</sup>
- Cell culture medium<sup>11</sup>
- *C reinhardtii* algae<sup>12</sup>
- *Drosophila*<sup>13</sup>
- *C elegans*<sup>14</sup>

References: 1 - Ali A et al 2018, Phokrai P et al 2018; 2 - Tahapary DL et al 2018; 3 - Becares et al 2019; 4 - Pan J et al 2019, Maatta J et al 2018, Rohm Met et al 2018, Shimazu T et al 2018; 5 - Woo Met et al 2018, Tian X et al 2017; 6 - Liu W et al 2017; 7 - Hao et al 2017, Rui W et al 2016; 8 - Honore S Met et al 2018; 9 - Van der Werf et al 2018; 10 - Lee SW et al 2018; 11 - Kostrzewski T et al 2017; 12 - Ramanan R et al 2018; 13 - Scopelliti A et al 2019; 14 - Pollard AK et al 2019

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### Platform

Microplate reader

### Properties

#### Storage instructions

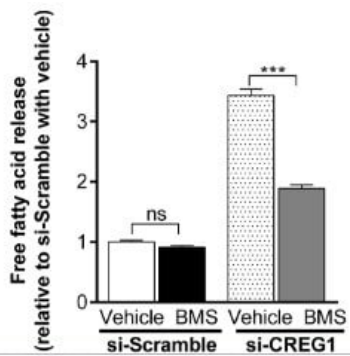
Store at -20°C. Please refer to protocols.

Components	100 tests	2000 tests
ACS Reagent	1 vial	20 vials
Acyl CoA Enzyme Mix	1 vial	20 vials
Assay Buffer V	1 x 25ml	20 x 25ml
Enhancer I	1 x 200µl	20 x 200µl
OxiRed Probe	1 x 200µl	20 x 200µl
Palmitic Acid Standard	1 x 300µl	20 x 300µl

### Relevance

Fatty acids are carboxylic acids with long hydrocarbon chains. The hydrocarbon chain length may vary from 8-30 carbons. Fatty acids play very important roles in normal metabolism and many disease development. They are precursors to a number of bioactive classes of compounds such as prostaglandins, leucotrienes and others, and have been implicated in diverse functions such as autism, immune system and inflammation response.

### Images



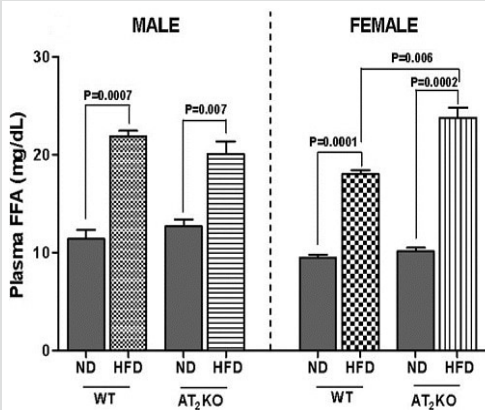
Tian, Xiaoxiang et al.  
 PLoS one vol. 12,5  
 e0176873. (2017)

Functional Studies - Free Fatty Acid Assay Kit

- Quantification (ab65341)

Tian, Xiaoxiang et al., PLoS one vol. 12,5 e0176873., Fig 6, doi:10.1371/journal.pone.0176873

Lipolysis were evaluated by measuring free fatty acids released into the culture medium of siCreg1 or si-Scramble 3T3-L1 cells using ab65341, which were treated with BMS-345541 (5  $\mu\text{mol/L}$ ), an NF- $\kappa\text{B}$  pathway inhibitor, or vehicle (DMSO) for 48 hours prior to lipolysis assessment. ns, no significance; and \*\*\* $P < 0.001$ .

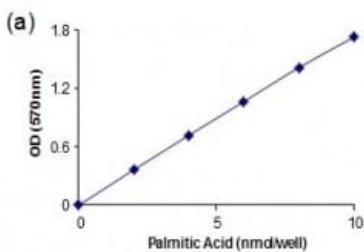


Samuel P et al., PLoS One 8: e48425 (2013).

Plasma FFA levels were measured using ab65341 in male and female wild-type (WT) or AT<sub>2</sub>KO mice either on normal diet (ND) or high fat diet (HFD).

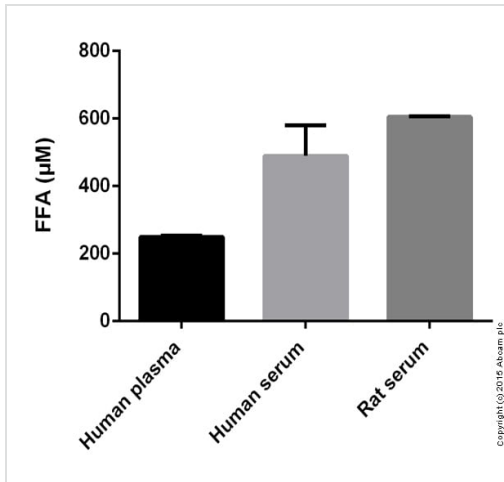
Functional studies - ab65341

Samuel P et al., PLoS One 8(1), Fig 7a. DOI: 10.1371/journal.pone.0048425. Reproduced under the Creative Commons license <http://creativecommons.org/licenses/by/4.0/>



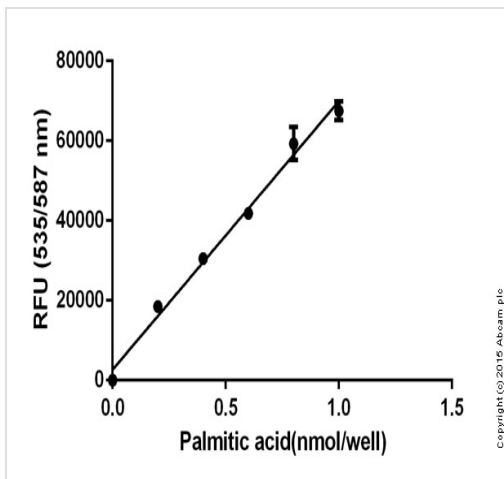
Colorimetric standard curve: mean of duplicates (+/-SD) with background readings subtracted.

Func S-1



Free Fatty Acid measured in biologicals showing concentration ( $\mu\text{M}$ ).

ab65341 Free Fatty Acid Quantification Kit



Fluorometric standard curve: mean of duplicates (+/-SD) with background readings subtracted.

ab65341 Free Fatty Acid Quantification Kit

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