



PCR MIX &amp; SEQUENCING PRIMERS

### PCR MIX and primers for *Scombridae* DNA sequencing

Description	Code
Test kit for the identification of fish species belonging to <i>Scombridae</i> family by means of PCR and DNA sequencing. For food sample highly processed.	IC-02-1202
	IC-02-1203

**Warning for user: the DNA sequences used in this kit are protected by international patent WO/2010/057525, registered by Parco Tecnologico Padano of Lodi.**

#### Introduction

The *Scombridae* fish family contains 15 genera and, about, 50 species of epipelagic and generally migratory marine fish. It includes species with a high commercial interest such as mackerels, bonitos and tunas, of which nearly 9 millions tons were caught world-wide in 2007.

Many of these fishes are present as the main or secondary ingredient in various food which are prone to frauds where low commercial value fish is sold as higher value one. The ability to uncover possible frauds represent an useful tool both for industry and final user.

**SCOMBRIDAE LONG SEQUENCE KIT** is able to identify the fish species really presents in a foodstuff, using PCR and DNA sequencing of a polymorphic region of *CytB*.

It is possible to determine the authenticity of fish belonging to *Scombridae* family (mackerels, bonitos, tunas and swordfishes), and can be useful also for other different marine fish as cods and salmons. Contrast to other "DNA barcoding sequences" that are commonly used for species-level identification, the "minibarcode DNA" used in this test allows an unambiguous result for processed food samples in which the DNA is damaged or highly damaged like canned fish (even in oil).

#### Technical Features

**Number of Analysis:** 50 (or 25) tests

**Functionality:** **SCOMBRIDAE SHORT SEQUENCE KIT**, by means of PCR and DNA sequencing of a polymorphic region of *CytB*, is able to identify the fish species belonging to *Scombridae* family as tunas, bonitos, mackerels, swordfishes. Moreover, the kit can be used for the identification of different marine species as *Salmonidae* (salmons) and *Gadidae* (cods). See **Tab.1**.

**Kit components:** **Mix AMP A**, **Mix AMP B** (for the amplification of mitochondrial regions of interest), positive control of *Thunnus albacares*, extended primers for the sequencing: the couple **S1A** and **S2A** and the couple **S1B** and **S2B**, sterile H<sub>2</sub>O DNase free.

#### Test sensitivity

The amplification of the *CytB* region allows the detection of 1 copy of haploide genome of *Thunnus albacares* which correspond to 0.9 pg of DNA.

#### Tab.1: Fish species tested to verify kit functionality:

<i>Scomber scombrus</i>	<i>Thunnus albacares</i>	<i>Thunnus alalunga</i>	<i>Auxis rochei rochei</i>
<i>Scomber japonicus</i>	<i>Thunnus atlanticus</i>	<i>Thunnus tonggol</i>	<i>Sarda sarda</i>
<i>Scomber colias</i>	<i>Thunnus orientalis</i>	<i>Katsuwonus pelamis</i>	<i>Xiphias Gladius</i>
<i>Scomber australasicus</i>	<i>Thunnus maccoyii</i>	<i>Euthynnus alleteratus</i>	<i>Salmo salar</i>
<i>Thunnus thynnus</i>	<i>Thunnus obesus</i>	<i>Auxis thazard thazard</i>	<i>Merluccius hubssi</i>

**The kit has been developed in collaboration with the Research Unit of Integrative Biology - Parco Tecnologico Padano of Lodi (Italy).**