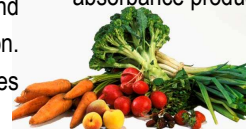


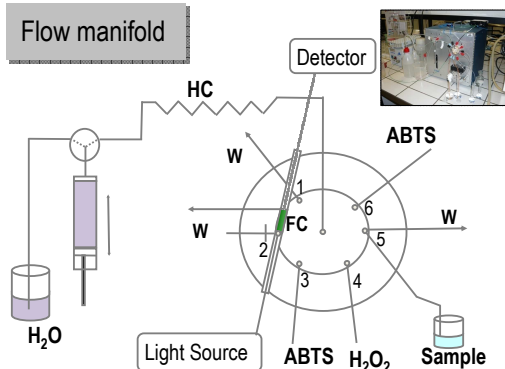
## SEQUENTIAL INJECTION LAB-ON-VALVE SYSTEM FOR THE DETERMINATION OF THE ACTIVITY OF PEROXIDASE IN VEGETABLES

Peroxidase (E.C. 1.11.1.7) is an enzyme commonly found in vegetables that can be responsible for a negative effect on the colour and on the flavour of raw or processed food. It is widely used to evaluate the effectiveness of fruits and vegetables thermal blanching, due to its resistance to thermal inactivation. Blanching process is a thermal procedure designed to inactivate the enzymes responsible for generation of off-flavours and off-odours.

The determination was based on the reaction of hydrogen peroxide with ABTS catalysed by HRP. The activity value is a result of the increase on the absorbance produced by the oxidized ABTS measured at 410 nm during 30 s.



### Flow manifold



SI-LOV manifold used. HC, holding coil; FC, flow cell; ABTS, 160 mg/L; H<sub>2</sub>O<sub>2</sub>, hydrogen peroxide, 0.8 g/L; W, waste.

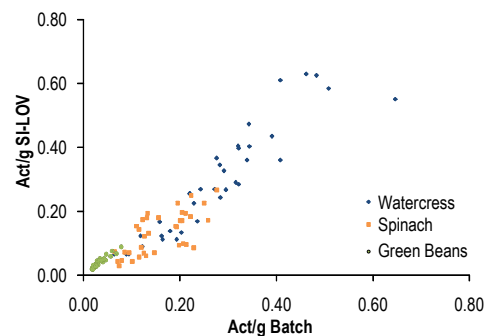
### Flow protocol sequence

Description	Volume (µL)	Flow rate (µL/s)	SV position
Aspirate carrier to HC	1000	150	-
Aspirate ABTS to HC	50	80	3
Aspirate H <sub>2</sub> O <sub>2</sub> to HC	15	25	4
Aspirate sample to HC	15	25	5
Aspirate ABTS to HC	100	80	6
Reverse flow, reference scan	10	15	2
Dispense HC content	110	15	2
Stop flow, data acquisition	-	-	-
System washing	-	150	2

### Figures of merit of the developed method

Parameter	Value
Reagent consumption	
ABTS	24 µg/assay
H <sub>2</sub> O <sub>2</sub>	12 µg/assay
Sample	15 µL/assay
Waste production	1.2 mL/assay
Determination rate	1 det./min
Dynamic range	Up to 2.0 mg/L
LOD	0.3 mg/L
LOQ	0.9 mg/L

### Analysis of vegetable extracts



### Monitoring of blanching process

