Supplementary information

Table S.1. Percentage of seed germination of the tested species at different saline concentrations.

G%	0	50	100	150	200	300	400
D. viscosa	85.0±8.1	92.0±10.1	75.9±12.6	69.0±8.3	59.3±11.0*	16.6±14.3*	1.0±2.0*
L. crithmoides	94.4±6.7	83.0±5.5	83.8±7.3	89.3±3.5	65.7±9.8*	15.0±12.4*	1.0±2.0*
I. helenium	100.0±0.0	100.0±0.0	88.4±3.2	44.4±16.0*	34.9±21.5*	1.2±2.4*	0.0±0.0*

Table S.2. Variation of seed germination velocity of the tested species at different saline concentrations.

MGT	0	50	100	150	200	300	400
D. viscosa	5.2±0.8	6.4±0.4	8.1±0.7	9.0±0.9	14.2±1.7*	16.8±1.1*	23.1±5.4*
L. crithmoides	4.7±0.2	5.9±0.4	6.8±0.8	7.2±0.5	9.45±0.60*	22.9±4.7*	27.00*
I. helenium	11.2±1.0	11.3±0.9	17.3±1.0*	17.1±0.2*	20.4±1.8*	17.0±0.0*	-

Table S.3. Variation of the reduction in seed germination percentage (RPG) of the tested species at different saline concentrations.

RGP%	0	50	100	150	200	300	400
D. viscosa	-	0.0±0.0	11.1±9.1*	19.0±3.9*	30.7±6.7*	80.2±6.0*	94.4±2.6*
L. crithmoides	-	11.9±2.5	11.3±2.2	5.2±3.4	30.6±5.9*	82.2±15.0*	98.8±2.4*
I. helenium	-	0.0±0.0	11.6±3.2	55.6±16.0*	65.1±21.5*	98.8±2.4*	100.0±0.0*

Table S.4. Variation of the time for first germination of seeds at the tested salt concentration in the different studied species.

Day 1st G	0	50	100	150	200	300	400
D. viscosa	2	3	2	2	6	9	18
L. crithmoides	2	3	2	4	5	10	27
I. helenium	7	6	11	13	15	17	-

Table S.5. Variation in the percentage of seed recovery of the tested species exposed at different saline concentrations.

R%	100	150	200	300	400
D. viscosa	20.8±25.0	41.7±41.9	74.1±20.5	94.1±4.8	91.1±10.1
L. crithmoides	37.5±28.5	75.0±50.0	86.0±16.1	98.8±2.4	100.0±0.0
I. helenium	100.0±0.0	100.0±0.0	100.0±0.0	83.7±8.5	63.7±18.9

Figure S.1. Square wave voltammogram at GCE of a 0.1 mM solution of 3,5- dicaffeoylquinic acid in air-saturated 0.25 M HAc/NaAc buffer at pH 4.75. Potential scan initiated at –0.2 V vs. Ag/AgCl in the positive direction; potential step increment 4 m; square wave amplitude 25 mV; frequency 5 Hz.

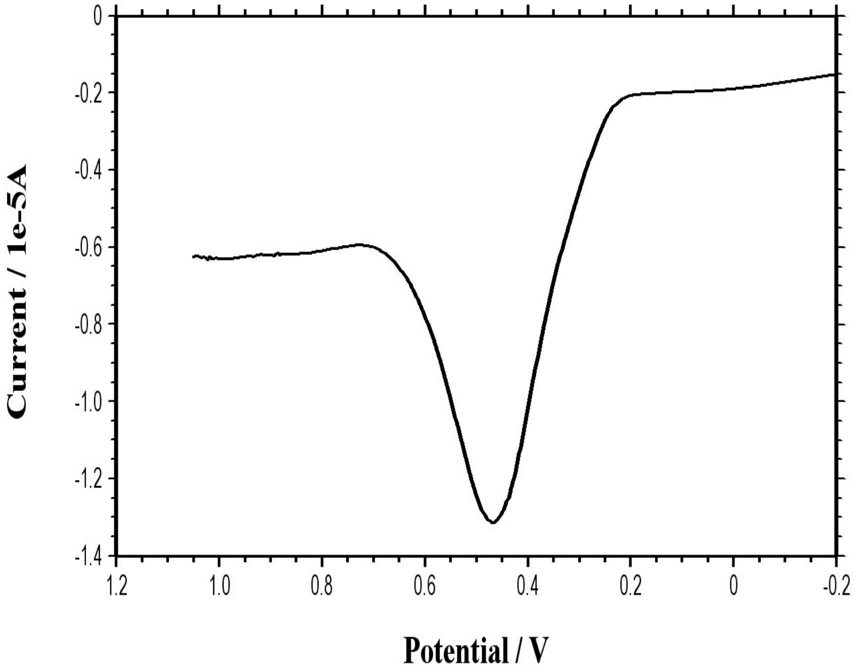
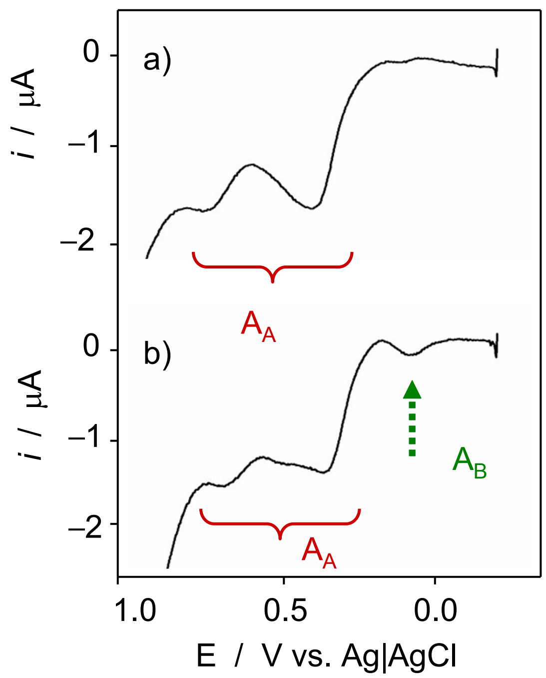


Figure S.2. Cyclic voltammogram of a microparticulate film of the ethanolic extract of leaves of seedlings of *Dittrichia viscosa* deposited on GCE in contact with 1.0 mM H_2O_2 solution in 0.25 M HAc/NaAc buffer at pH 4.75. Potential scan initiated at –0.25 V vs. Ag/AgCl in the positive direction; potential scan rate 50 mV s^{-1}. Semi-derivative data convolution was carried out to enhance peak resolution.



Scheme S.1. Mechanism proposed for the reduction of O_2 on carbon electrodes.[52,53] The first step consists of the one-electron reduction yielding adsorbed superoxide radical anion:

$$O_2 + e^- \rightarrow O_2{\cdot}^- \text{(ads)} \quad \text{(S.1)}$$

This radical can give hydroperoxide radical:

$$O_2{\cdot}^- \text{(ads)} + H_2O \rightarrow HO_2{\cdot} \text{(ads)} + OH^- \quad \text{(S.2)}$$

Competing with the disproportionation:

$$2O_2{\cdot}^- \text{(ads)} + H_2O \rightarrow HO_2^- + O_2 + OH^- \quad \text{(S.3)}$$

and electrochemical reduction:

$$HO_2{\cdot} \text{(ads)} + e^- \rightarrow HO_2^- \quad \text{(S.4)}$$

Processes, but can be directly reduced to hydroxyl radical and H_2O_2:

$$O_2{\cdot}^- + H^+ + e^- \rightarrow HO{\cdot} \quad \text{(S.5)}$$

$$O_2{\cdot}^- + 2H^+ + e^- \rightarrow H_2O_2 \quad \text{(S.6)}$$

As a result, at short experimentation times, depending on the experimental conditions, a different proportion of intermediate ROS species can accompany the reduction of O_2 to H_2O_2.