

**Deep eutectic solvents based on carboxylic acids and glycerol or propylene glycol as green media for extraction of bioactive substances from *Chamanerion angustifolium* (L.) Scop.**

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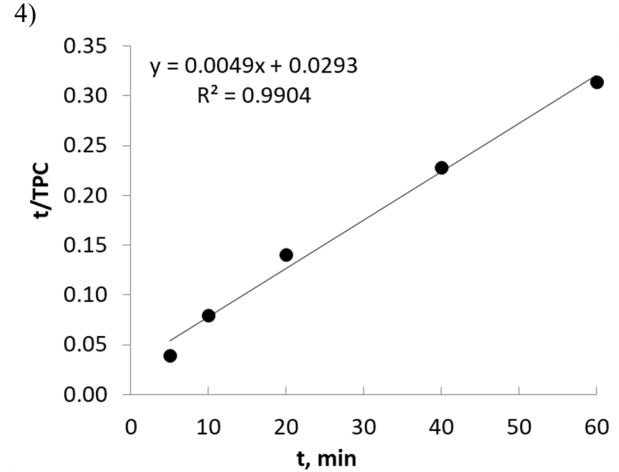
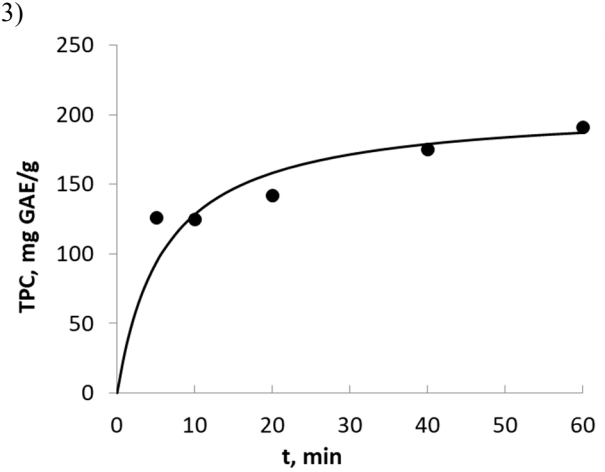
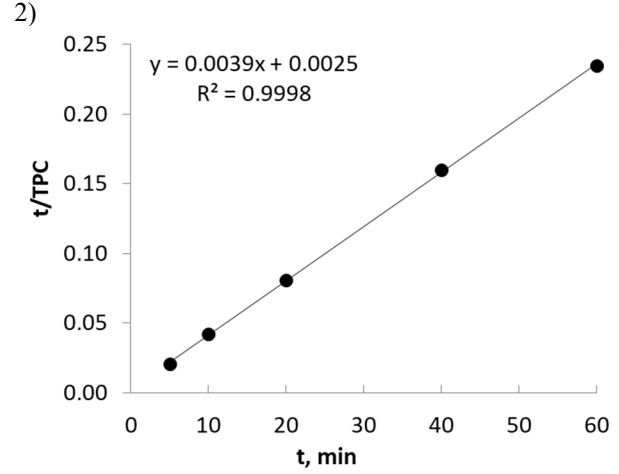
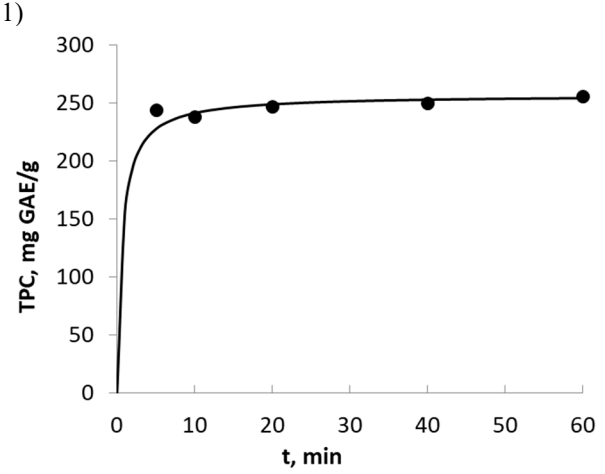
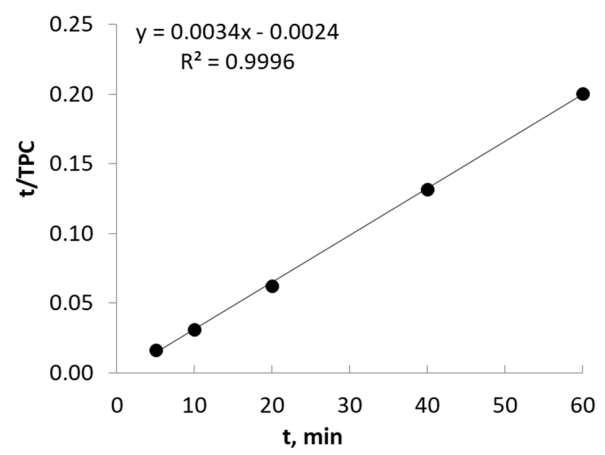
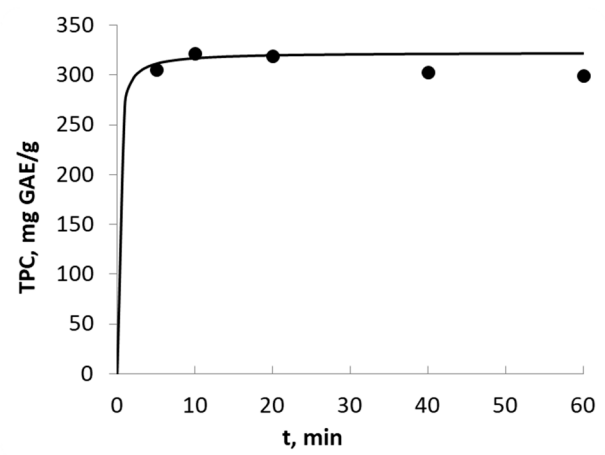
\* Correspondence: [tsvet.nik@mail.ru](mailto:tsvet.nik@mail.ru)

Supplementary materials

**S1.** Experimental values of density and dynamic viscosity of suited DESs with 10 molar part of water at 30°C.

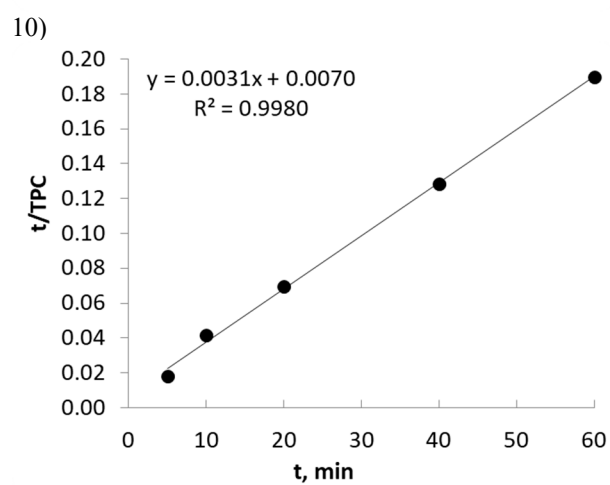
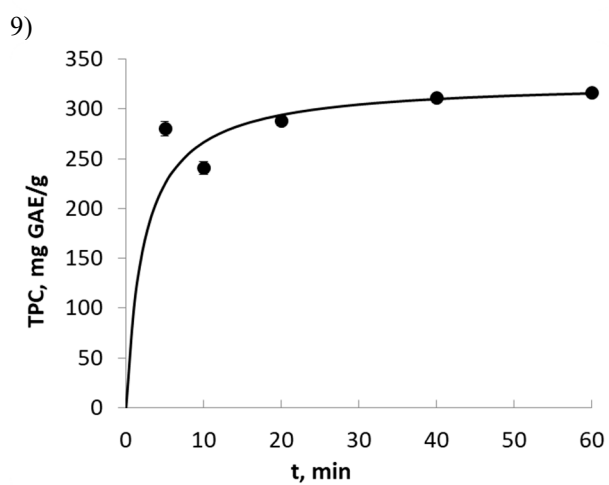
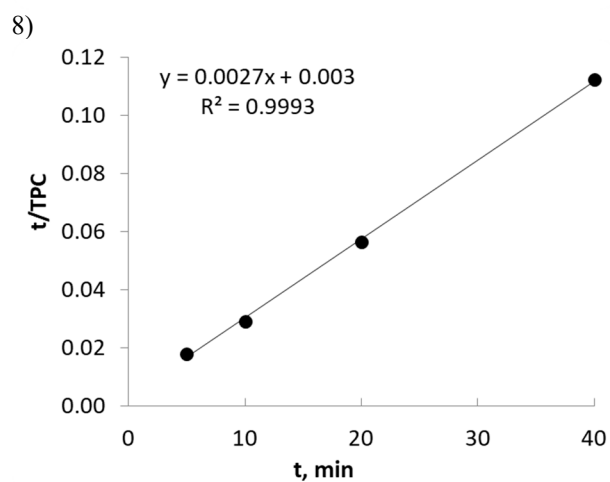
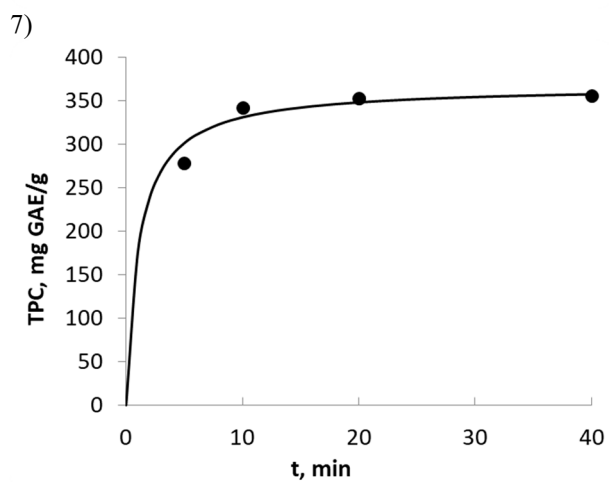
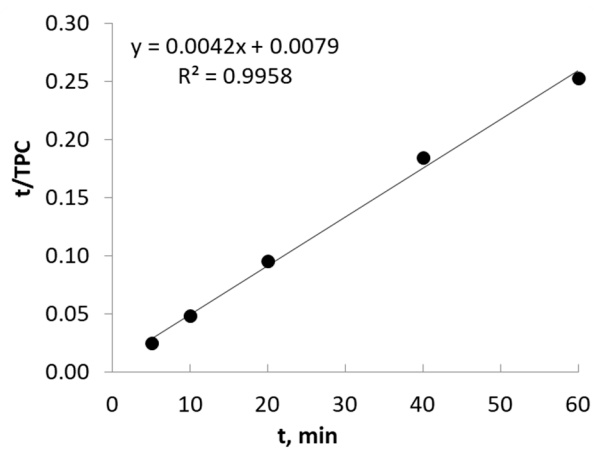
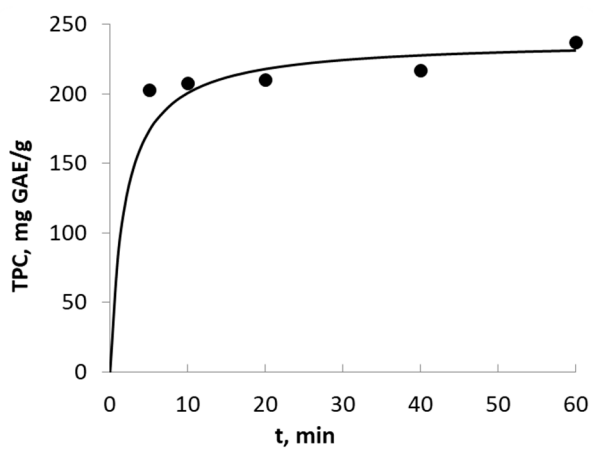
	<i>Density</i>	<i>Dyn. Viscosity</i>	<i>Variation Coefficient</i>	<i>Fw/Bw Deviation</i>
MAGL	1.16288	3.460	0.02	0.18
MAPG	1.10282	4.671	0.01	0.11
MalGL	1.20588	9.506	0.03	0.09
MalPG	1.13224	7.446	0.05	0.15
CAGL	1.23641	25.839	0.01	0.23
CAPG	1.13597	15.782	0.00	0.26

S2. Kinetical curves and linearization for TPC. 1-2 – MAGL, 3-4 – MAPG, 5-6 – MalGL, 7-8 – MalPG, 9-10 – CAGL, 11-12 – CAPG.



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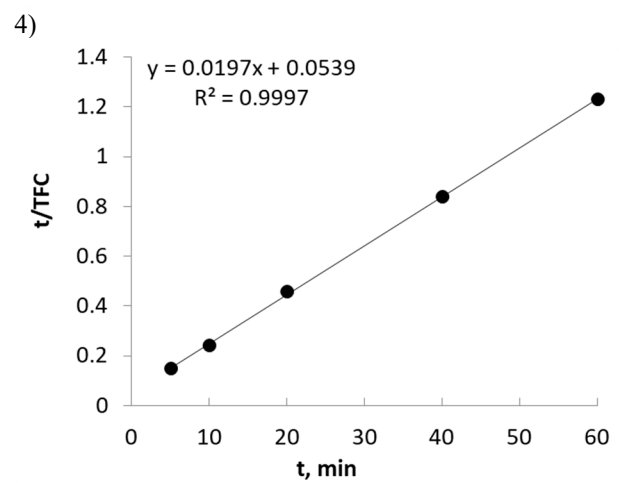
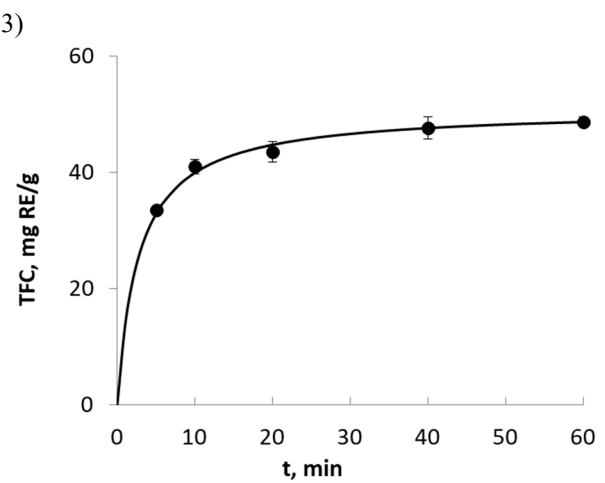
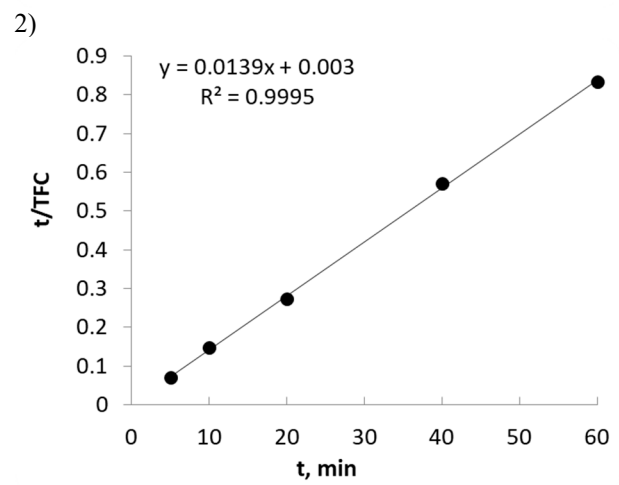
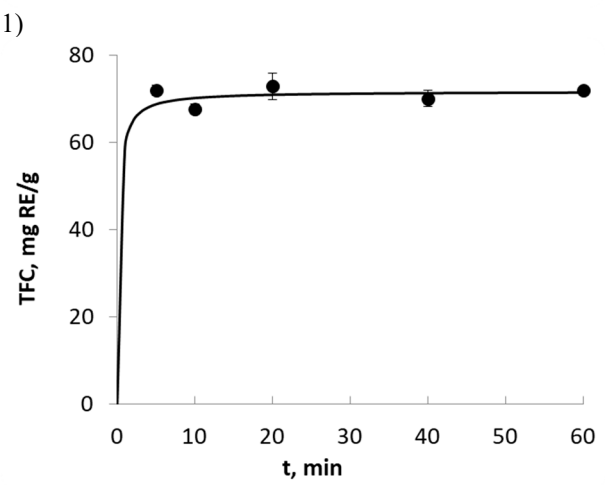
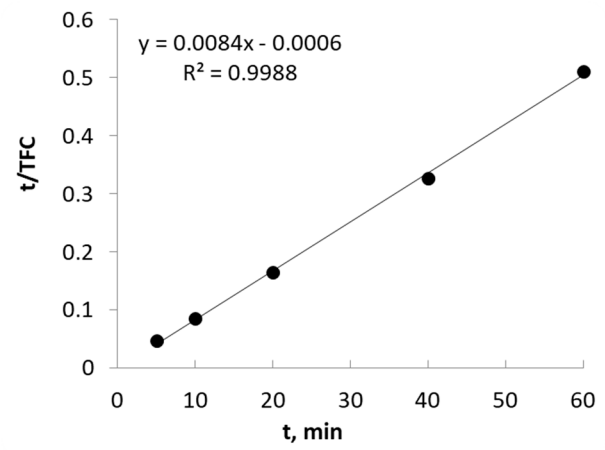
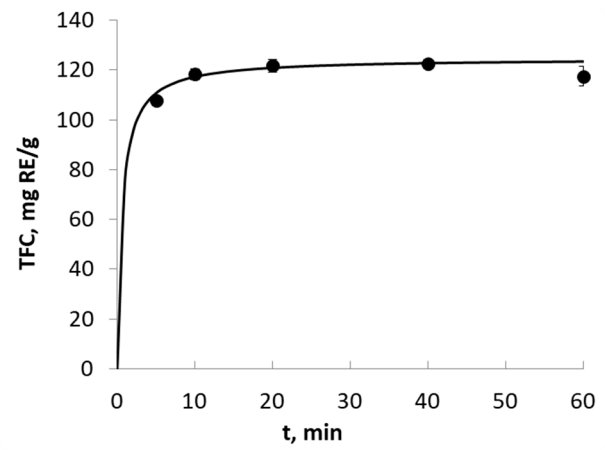
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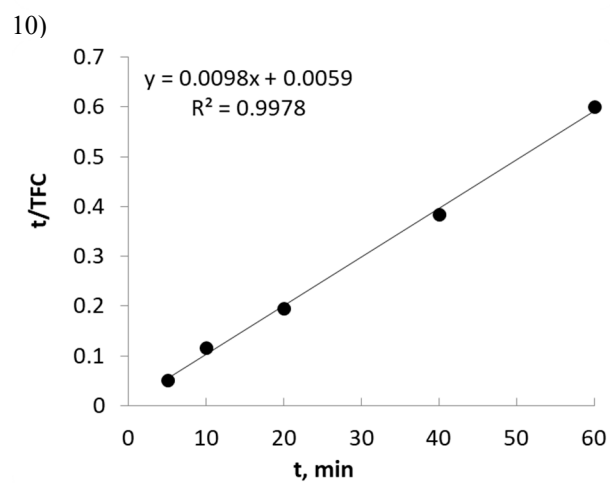
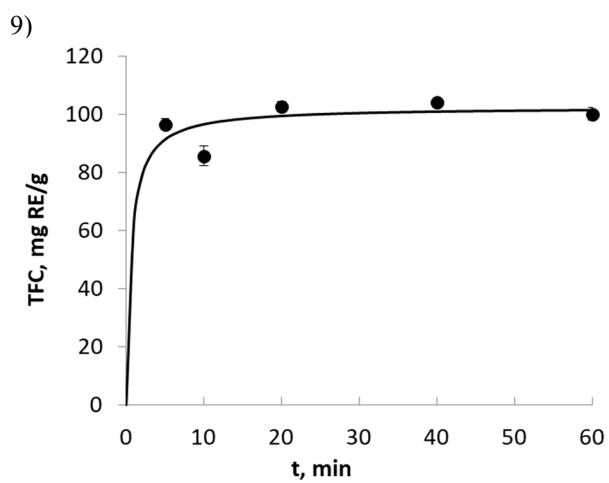
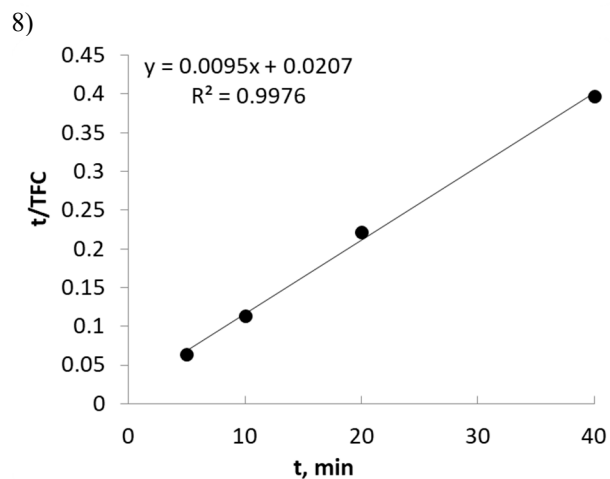
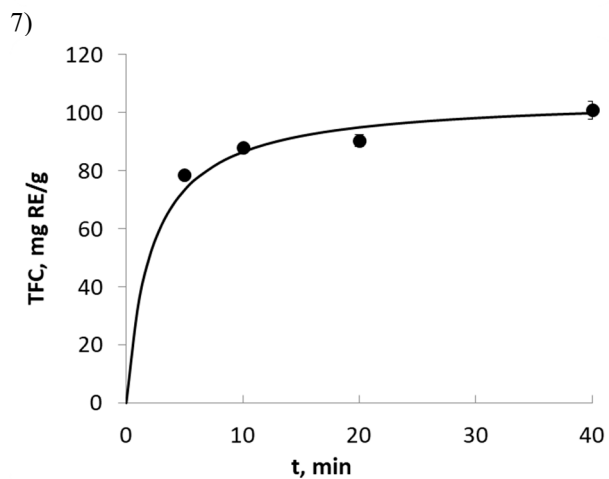
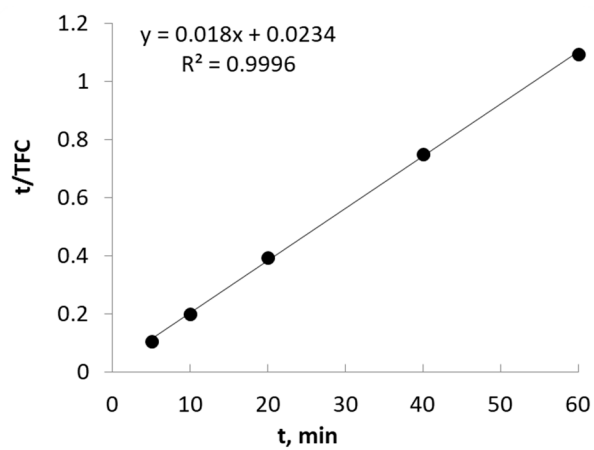
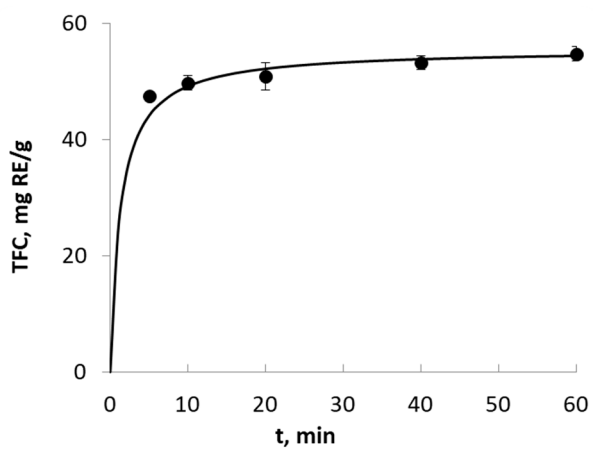
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**S3.** Kinetical curves and linearization for TFC. 1-2 – MAGL, 3-4 – MAPG, 5-6 – MalGL, 7-8 – MalPG, 9-10 – CAGL, 11-12 – CAPG.



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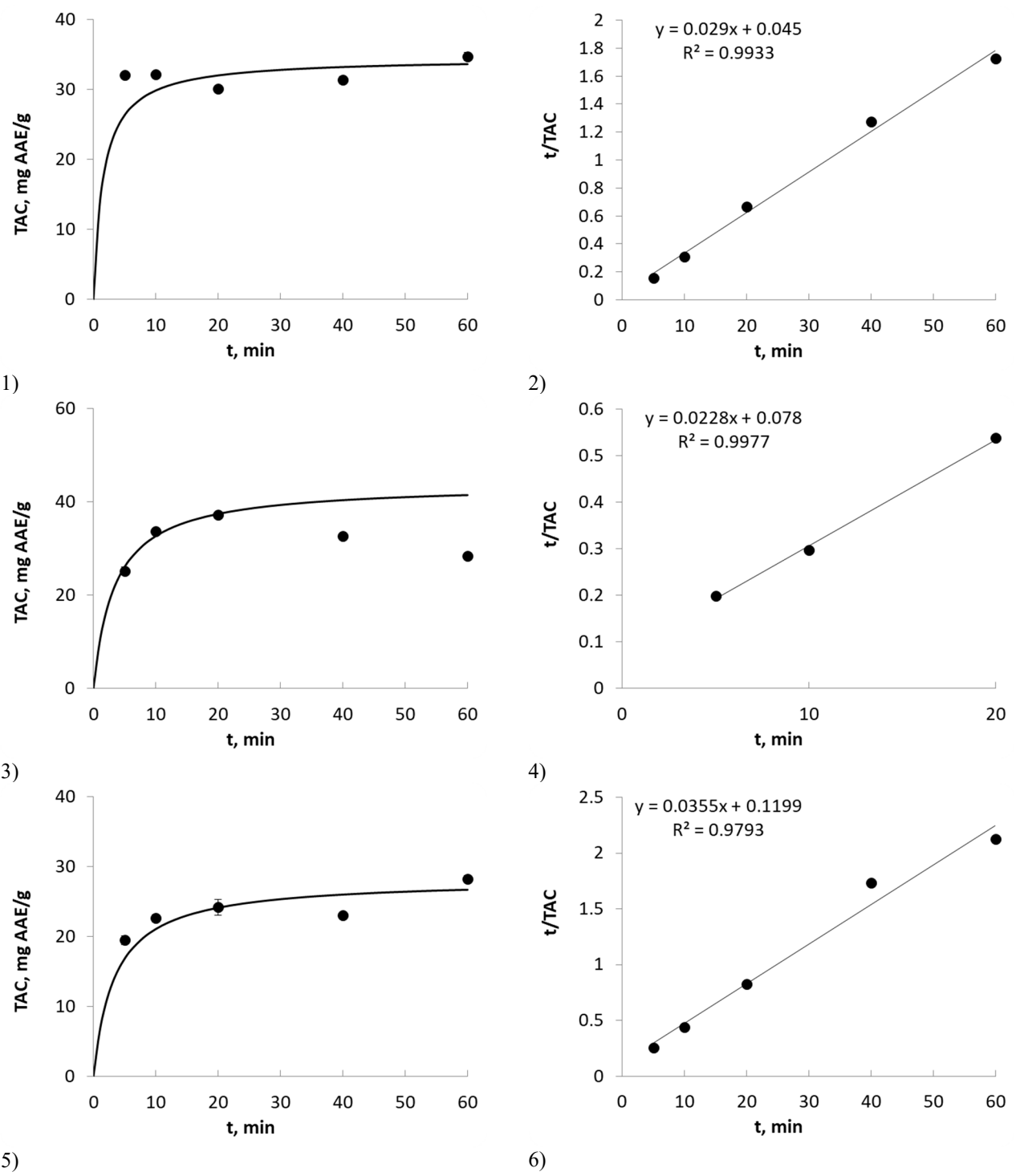
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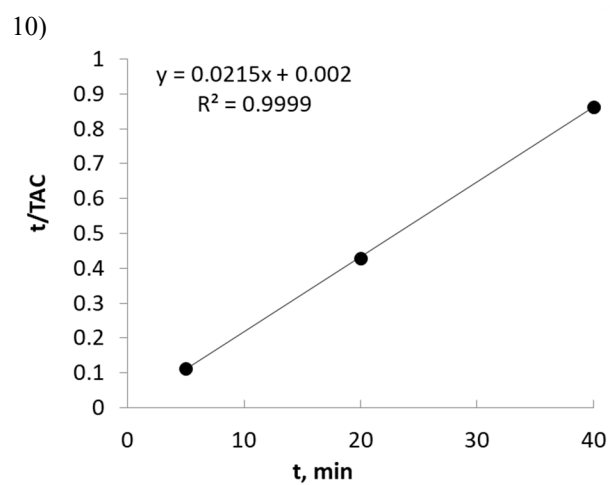
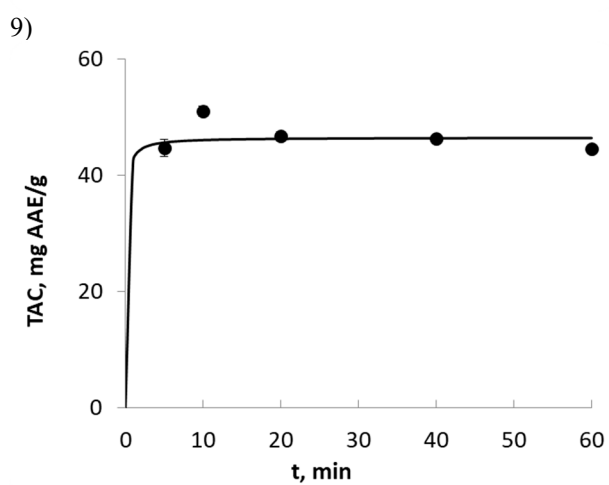
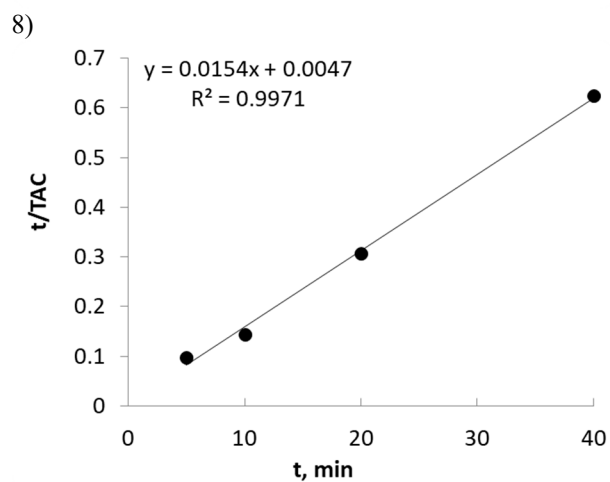
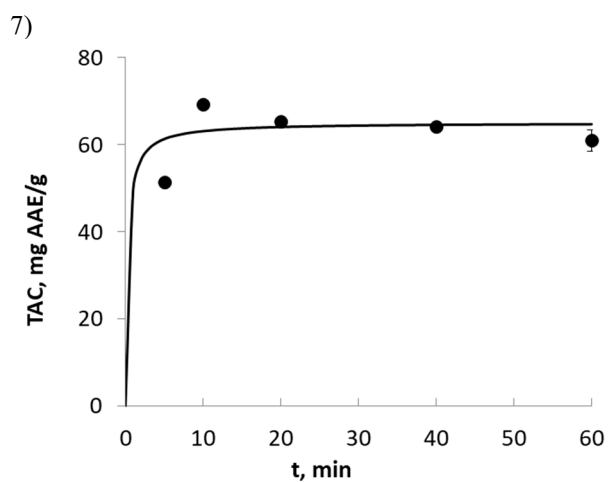
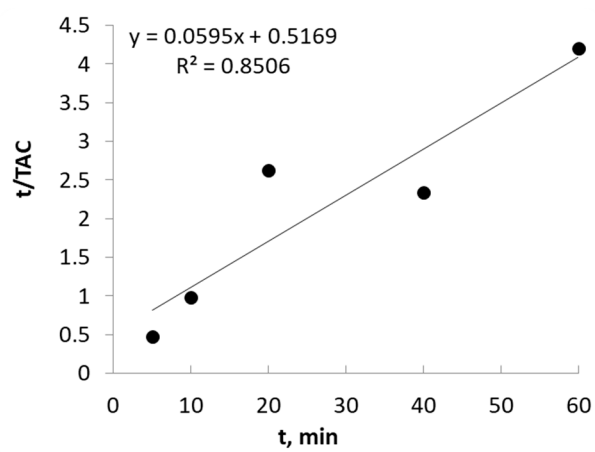
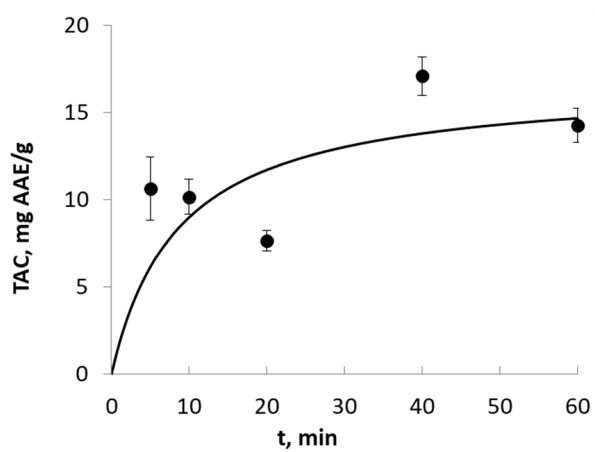
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**S4.** Calculated equilibrium yields ( $Y^{eq}$ ) and rate constants ( $k$ ) for TPC and TFC.

DES	TPC, mg GAE/g		TFC, mg RE/g	
	$Y^{eq}$	$k \times 10^3$	$Y^{eq}$	$k \times 10^3$
MAGL	322.7	17.0	124.7	12.7
MAPG	257.0	6.0	71.7	65.6
MalGL	205.9	0.8	50.9	7.2
MalPG	238.4	2.2	55.6	13.8
CAGL	367.3	2.5	105.2	4.4
CAPG	327.7	1.3	102.5	16.0

S5. Kinetical curves and linearization for TAC. 1-2 – MAGL, 3-4 – MAPG, 5-6 – MalGL, 7-8 –MalPG, 9-10 – CAGL, 11-12 – CAPG.



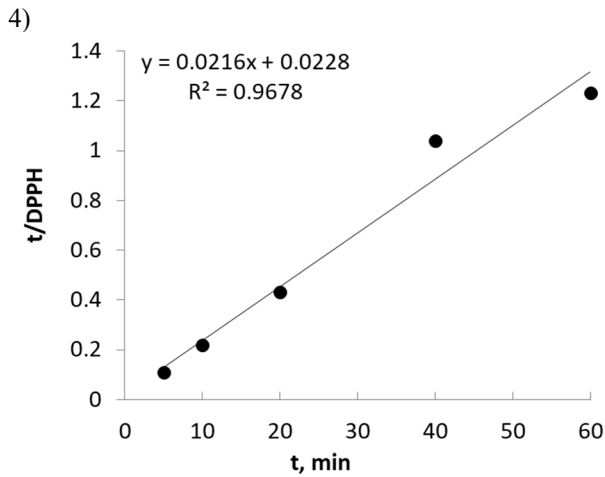
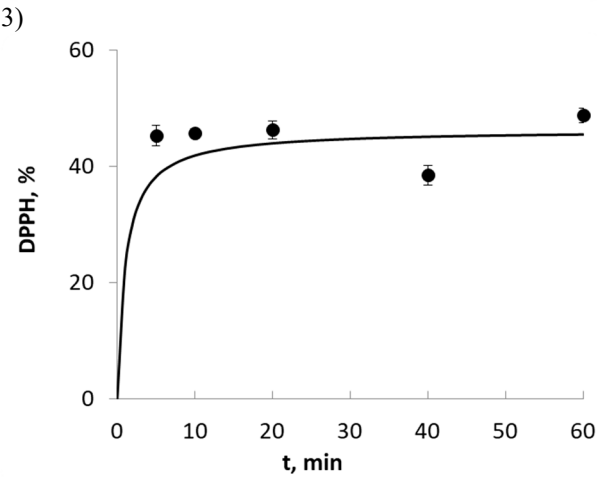
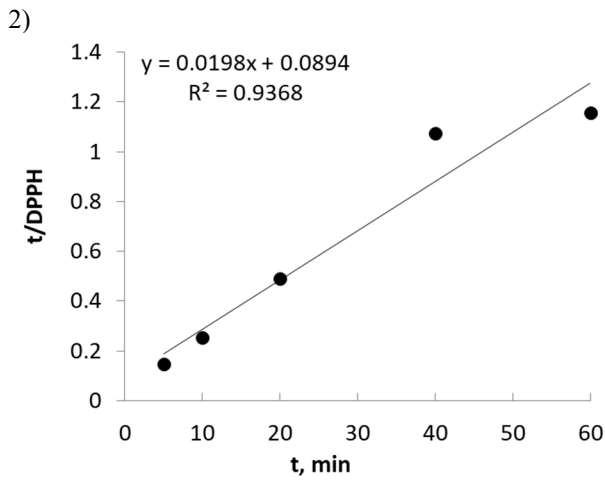
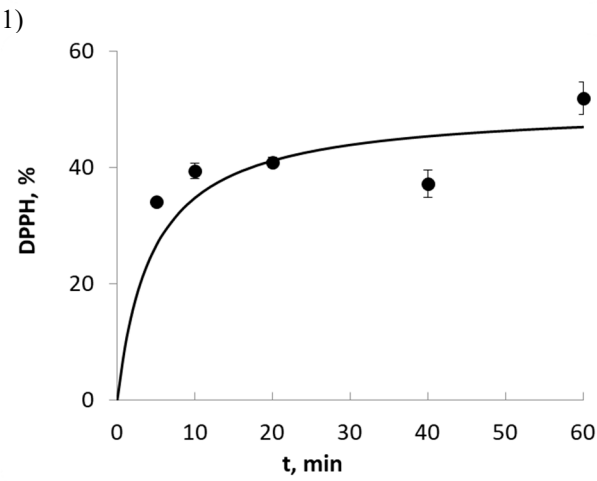
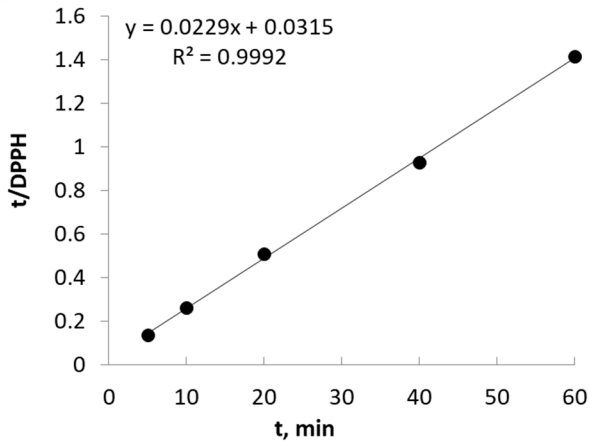
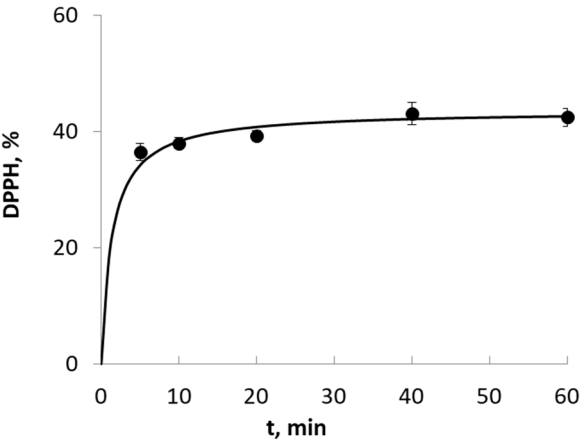


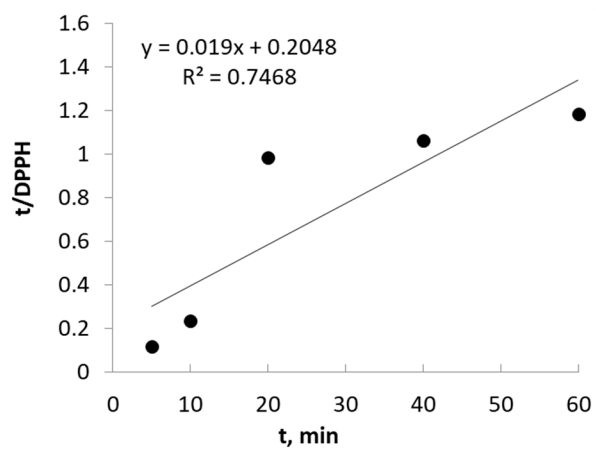
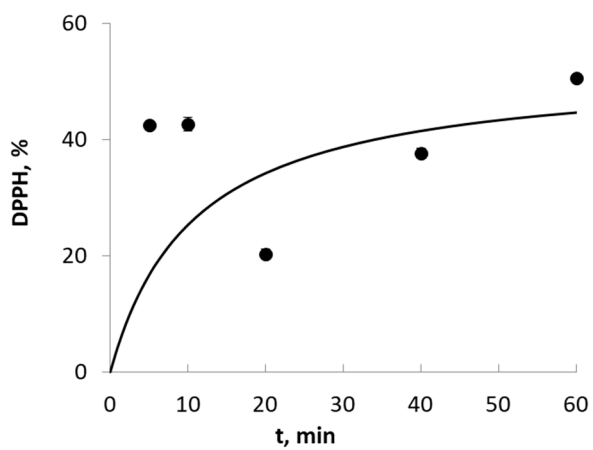
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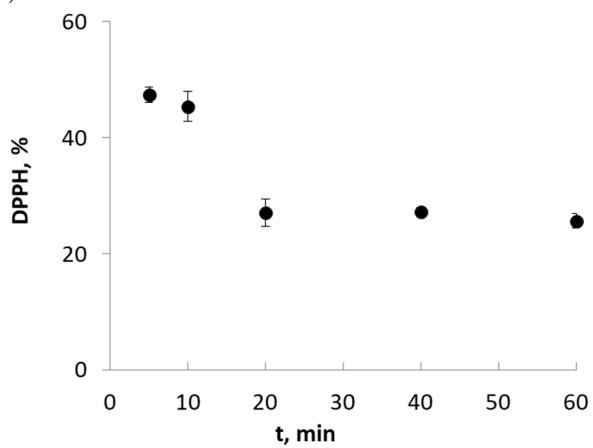


**S6.** Kinetical curves and linearization for DPPH. 1-2 – MAGL, 3-4 – MAPG, 5-6 – MalGL, 7-8 –MalPG, 9-10 – CAGL, 11-12 – CAPG.

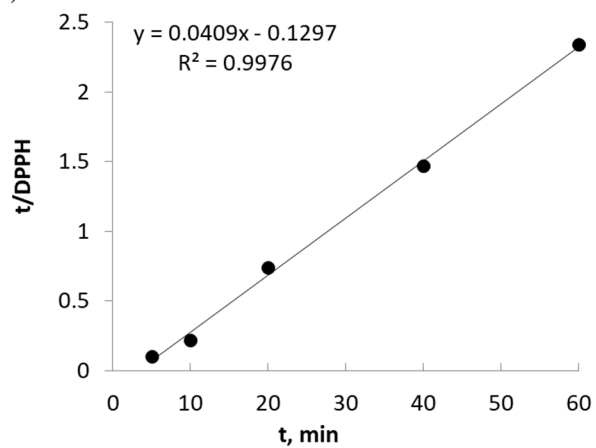




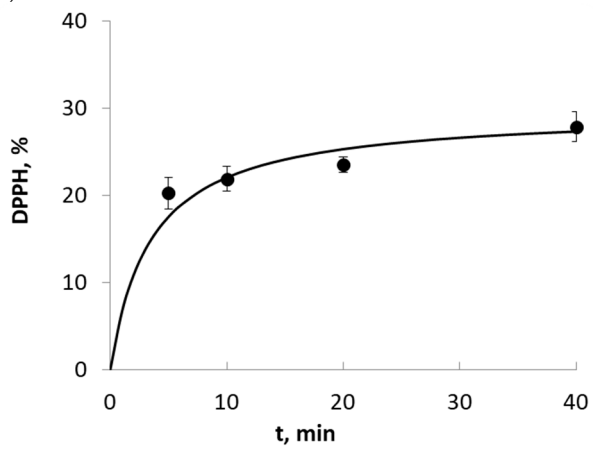
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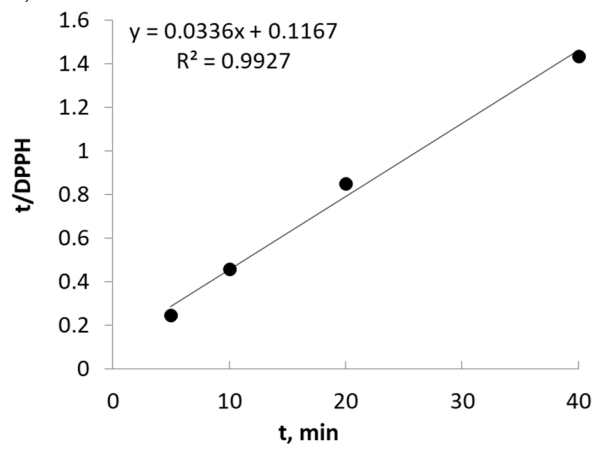
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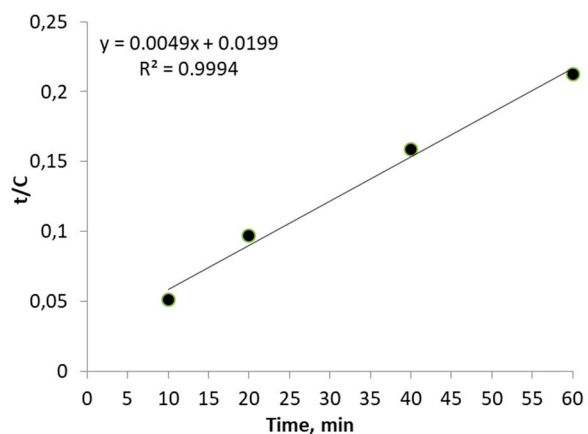
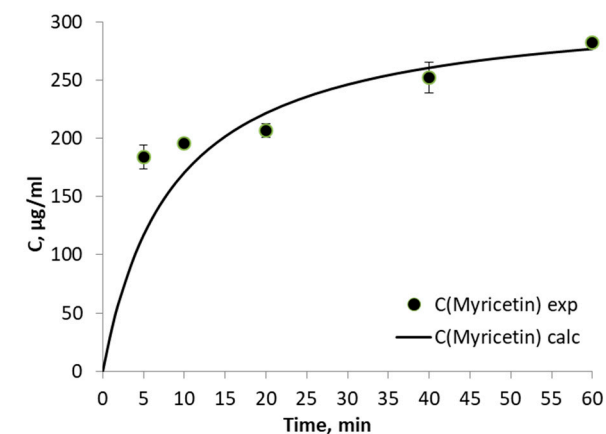
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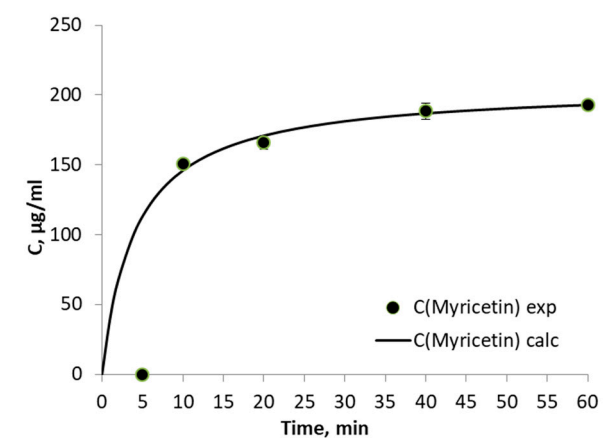
**S7.** Calculated equilibrium yields ( $Y^{eq}$ ) and rate constants ( $k$ ) for TAC and DPPH.

DES	TAC, mg AAE/g		DPPH, %	
	$Y^{eq}$	$k \times 10^3$	$Y^{eq}$	$k \times 10^3$
MAGL	34.5	18.7	43.6	16.7
MAPG	43.8	6.7	50.5	4.4
MalGL	28.2	10.5	46.3	20.4
MalPG	16.8	6.9	52.7	1.8
CAGL	65.0	50.5	25.0	-13.6
CAPG	46.5	233.3	29.7	9.7

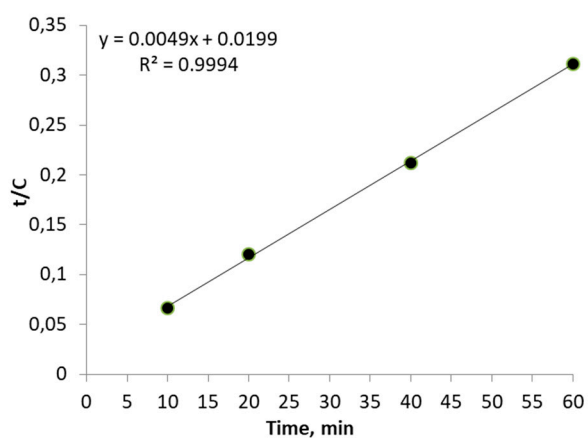
**S8.** Kinetical curves and linearization for myricetin. 1-2 – MAGL, 3-4 – MAPG, 5-6 – MalGL, 7-8 –MalPG, 9-10 – CAGL, 11-12 – CAPG.



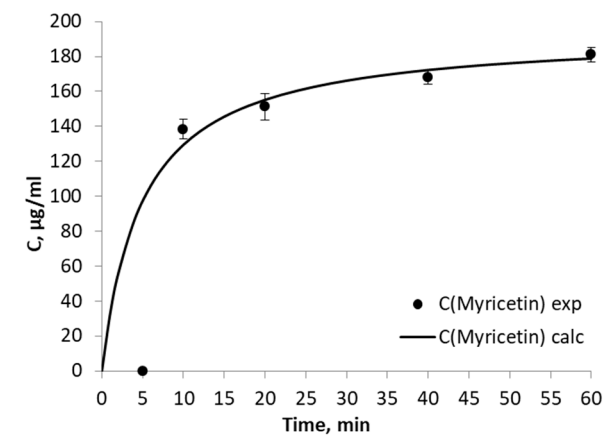
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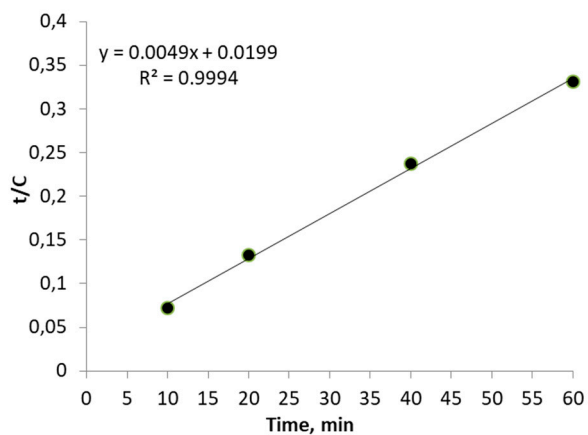
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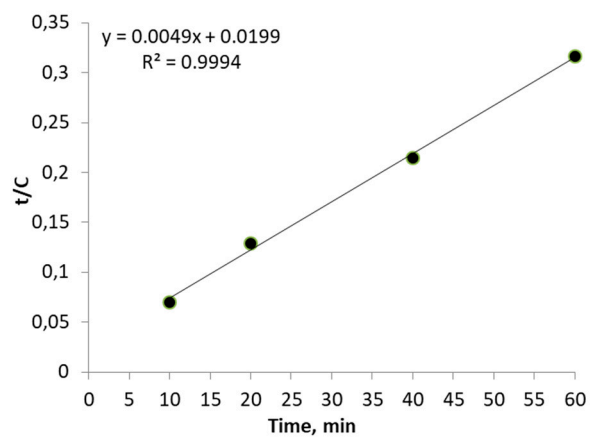
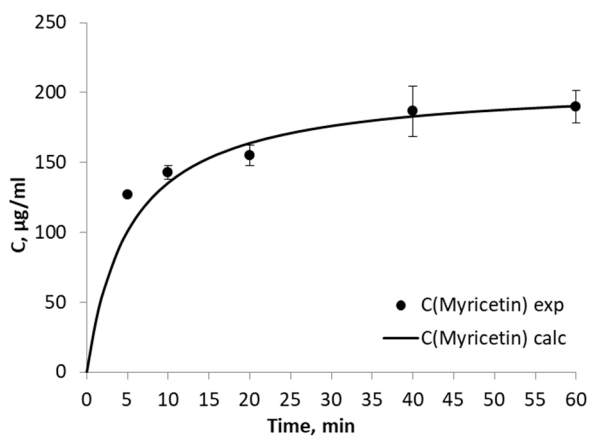


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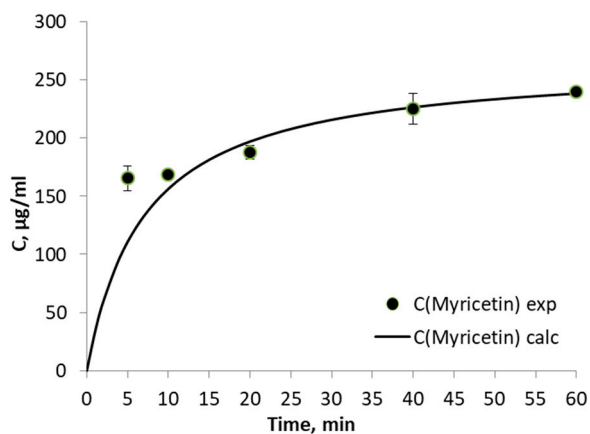


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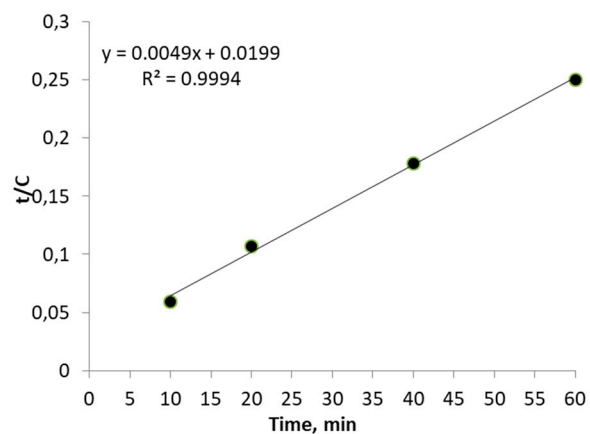
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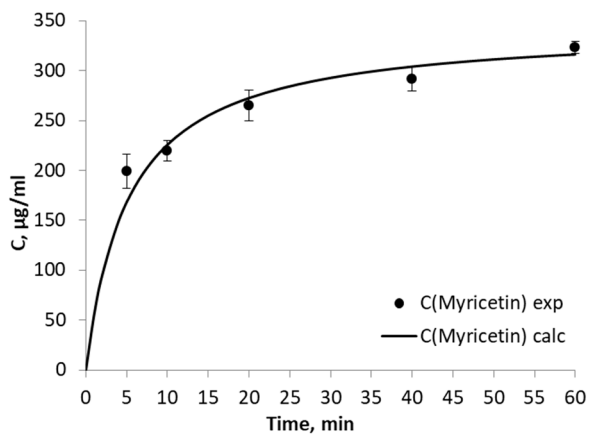
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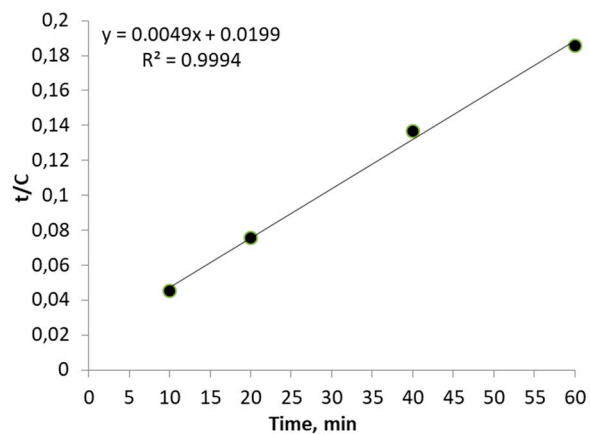
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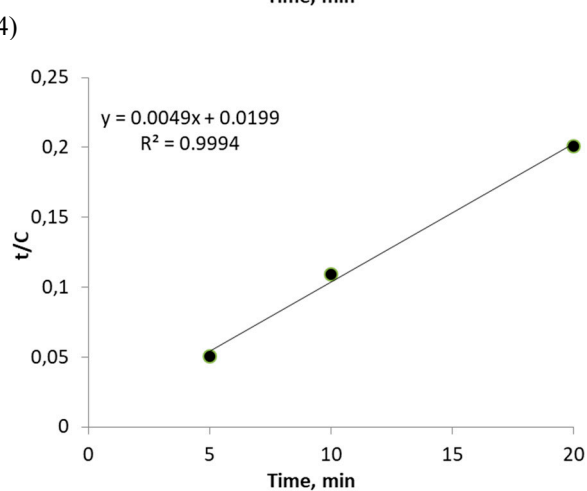
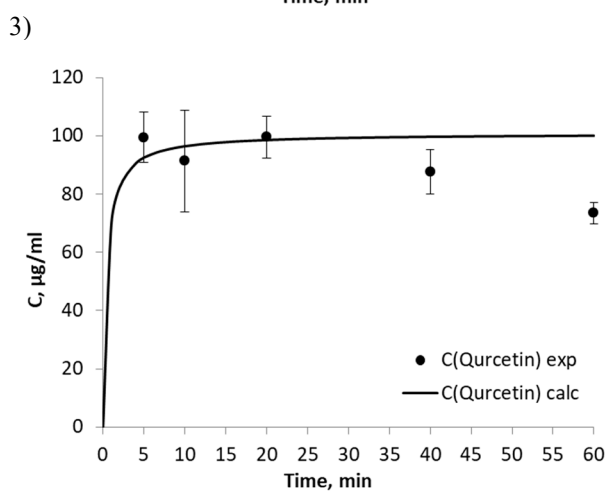
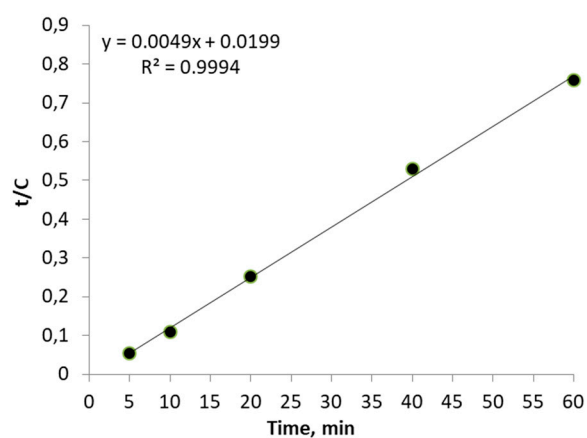
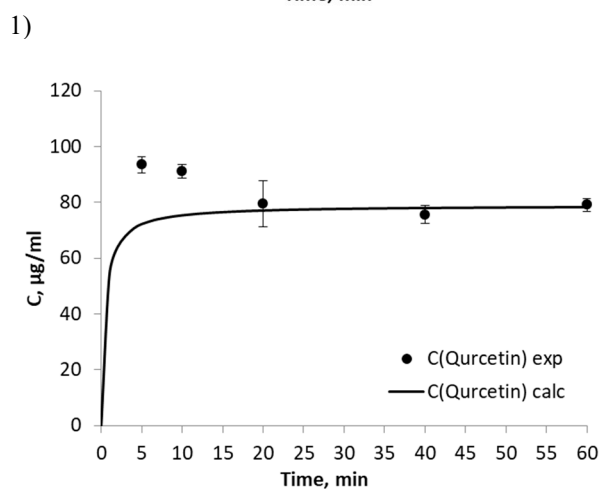
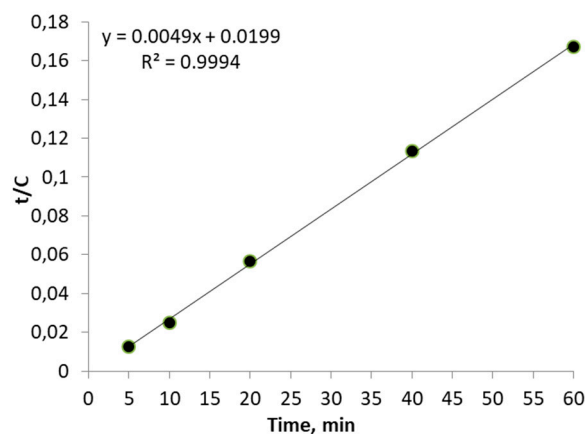
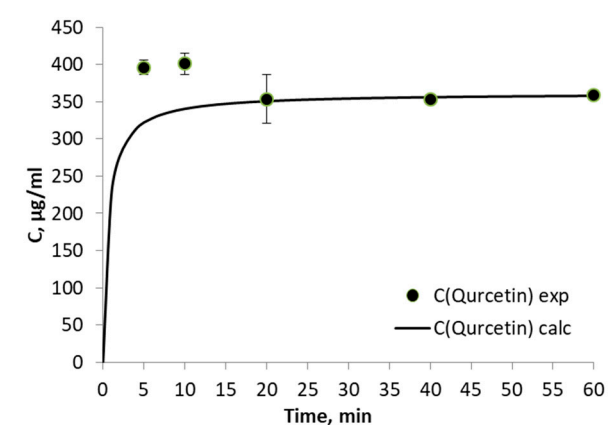
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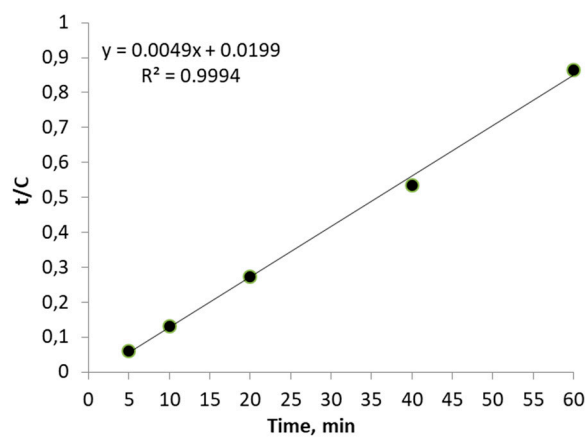
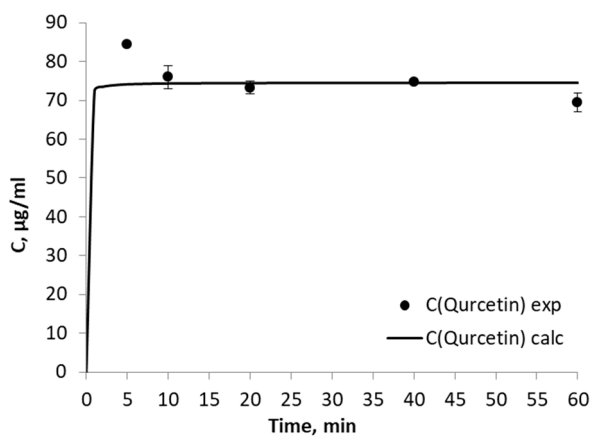


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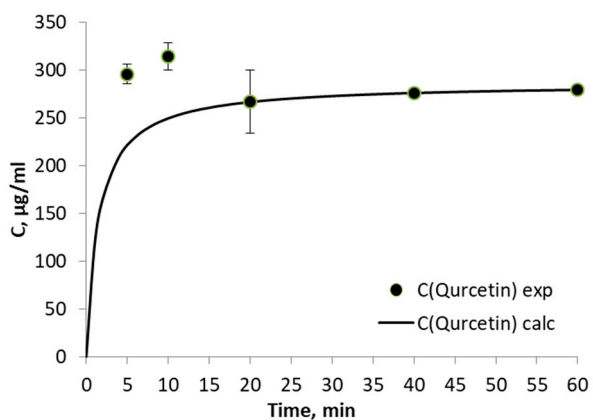
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**S9.** Kinetical curves and linearization for quercetin. 1-2 – MAGL, 3-4 – MAPG, 5-6 – MalGL, 7-8 –MalPG, 9-10 – CAGL, 11-12 – CAPG.

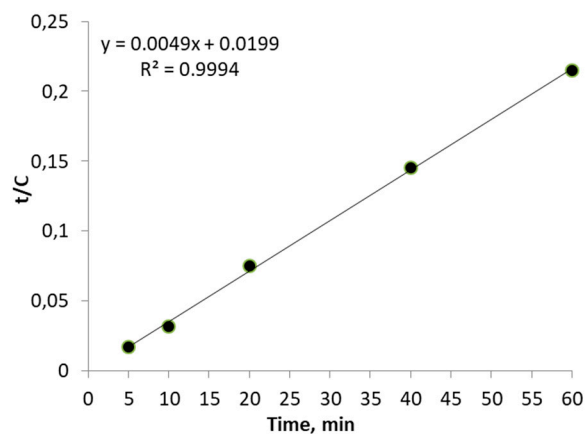




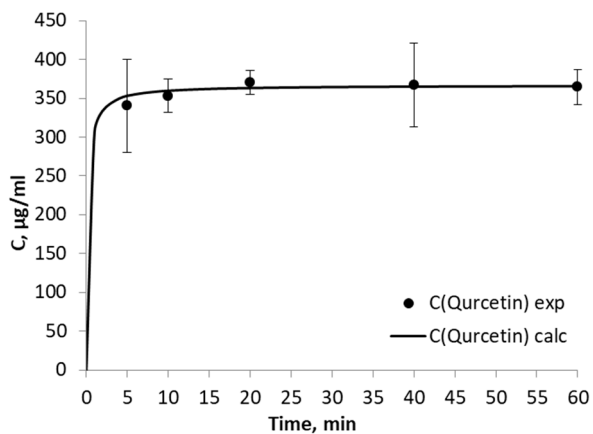
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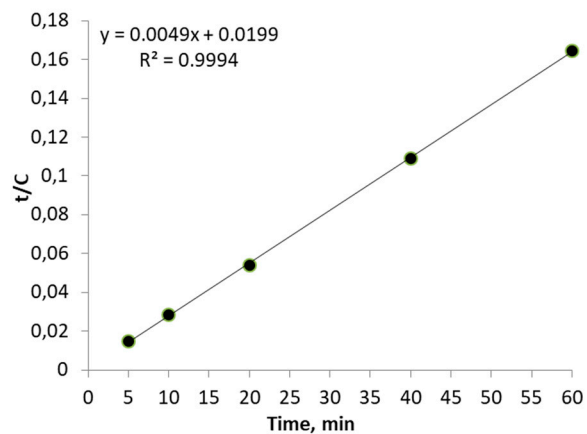
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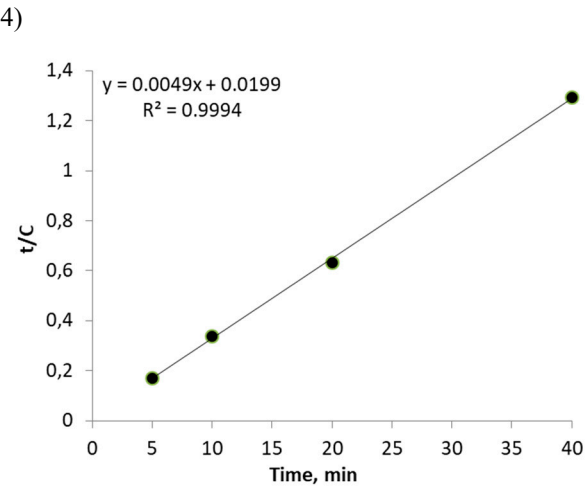
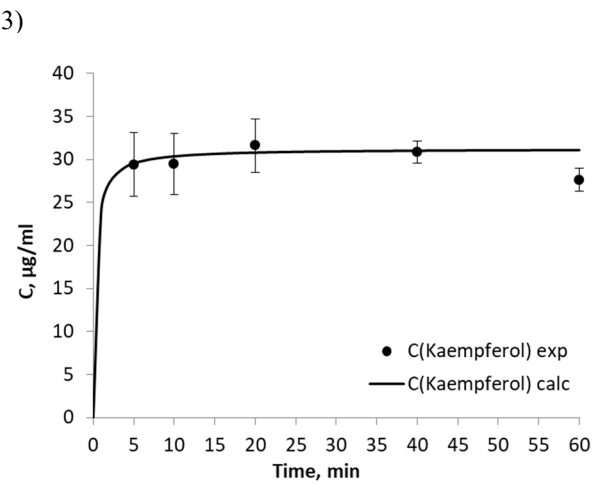
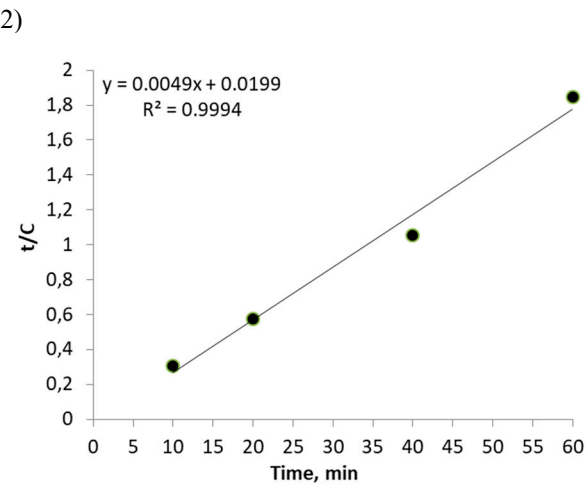
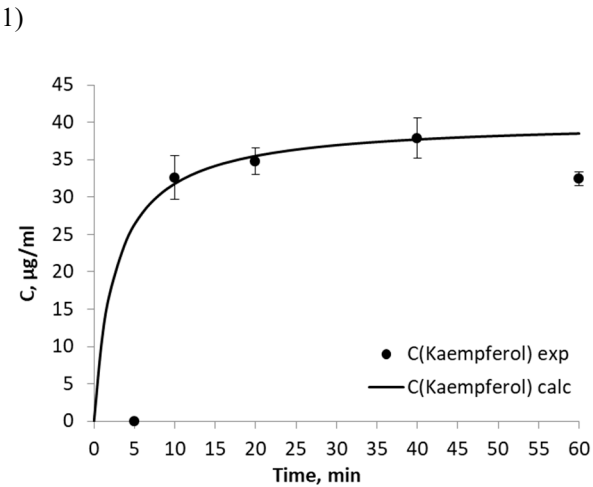
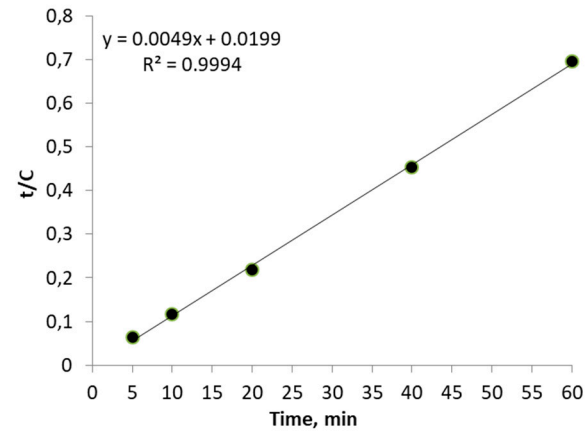
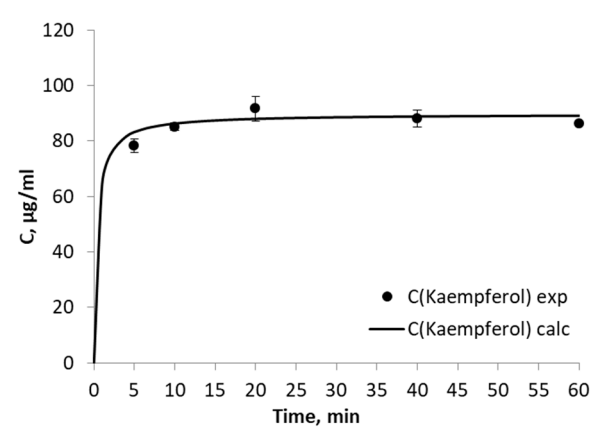
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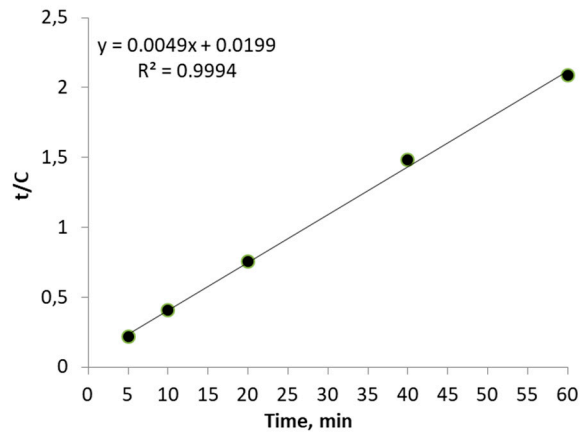
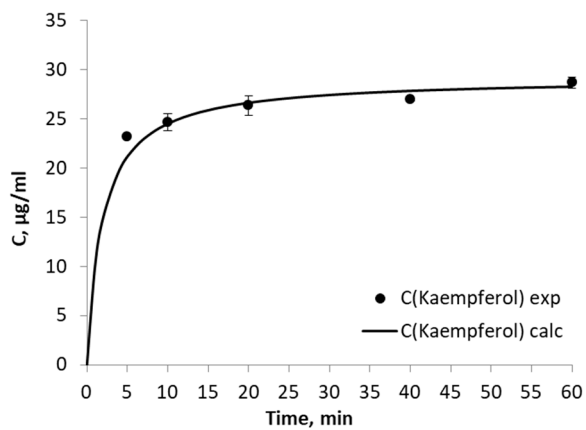
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**S10.** Kinetical curves and linearization for kaempferol. 1-2 – MAGL, 3-4 – MAPG, 5-6 – MalGL, 7-8 –MalPG, 9-10 – CAGL, 11-12 – CAPG.

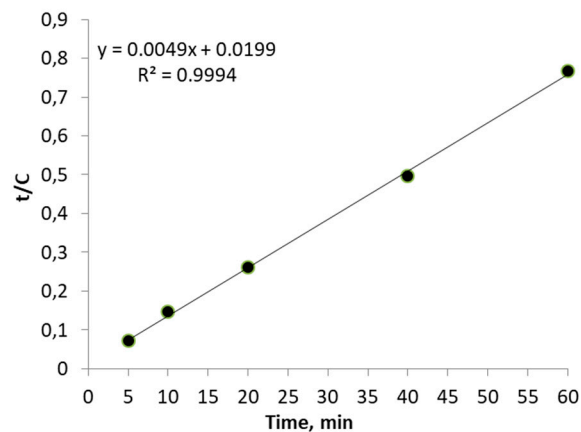
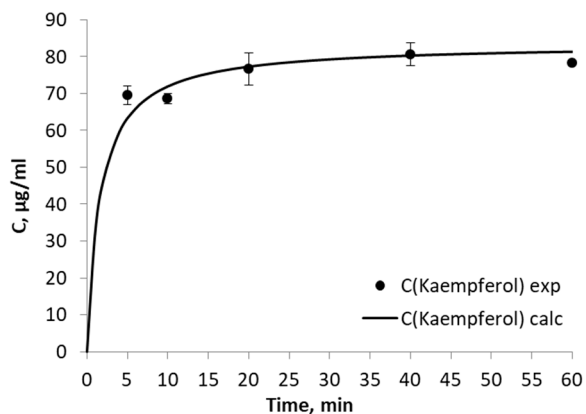






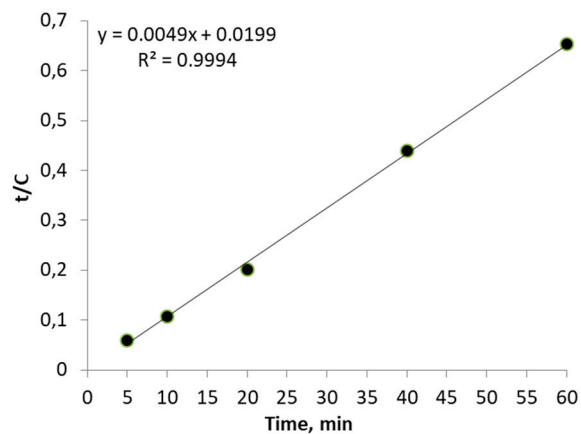
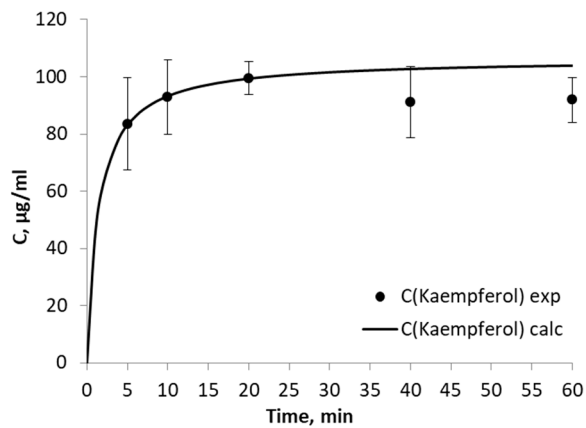
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**S11.** Calculated equilibrium yields ( $Y^{eq}$ ) and rate constants ( $k$ ) for describing of the experimental data on the kinetics of myricetin, quercetin , and kaempferol glycosides extraction.

DES	c(myricetin)		c(quercetin)		c(kaempferol)	
	$Y^{eq}$	$k \times 10^3$	$Y^{eq}$	$k \times 10^3$	$Y^{eq}$	$k \times 10^3$
MAGL	316.0	0.4	361.7	4.4	89.7	28.3
MAPG	206.1	1.2	78.9	27.0	40.2	9.4
MalGL	193.6	1.0	100.8	21.9	31.3	111.1
MalPG	207.2	0.9	74.6	464.9	29.2	18.0
CAGL	266.0	0.5	285.9	2.4	83.5	7.5
CAPG	343.7	0.6	366.9	13.9	106.4	6.7