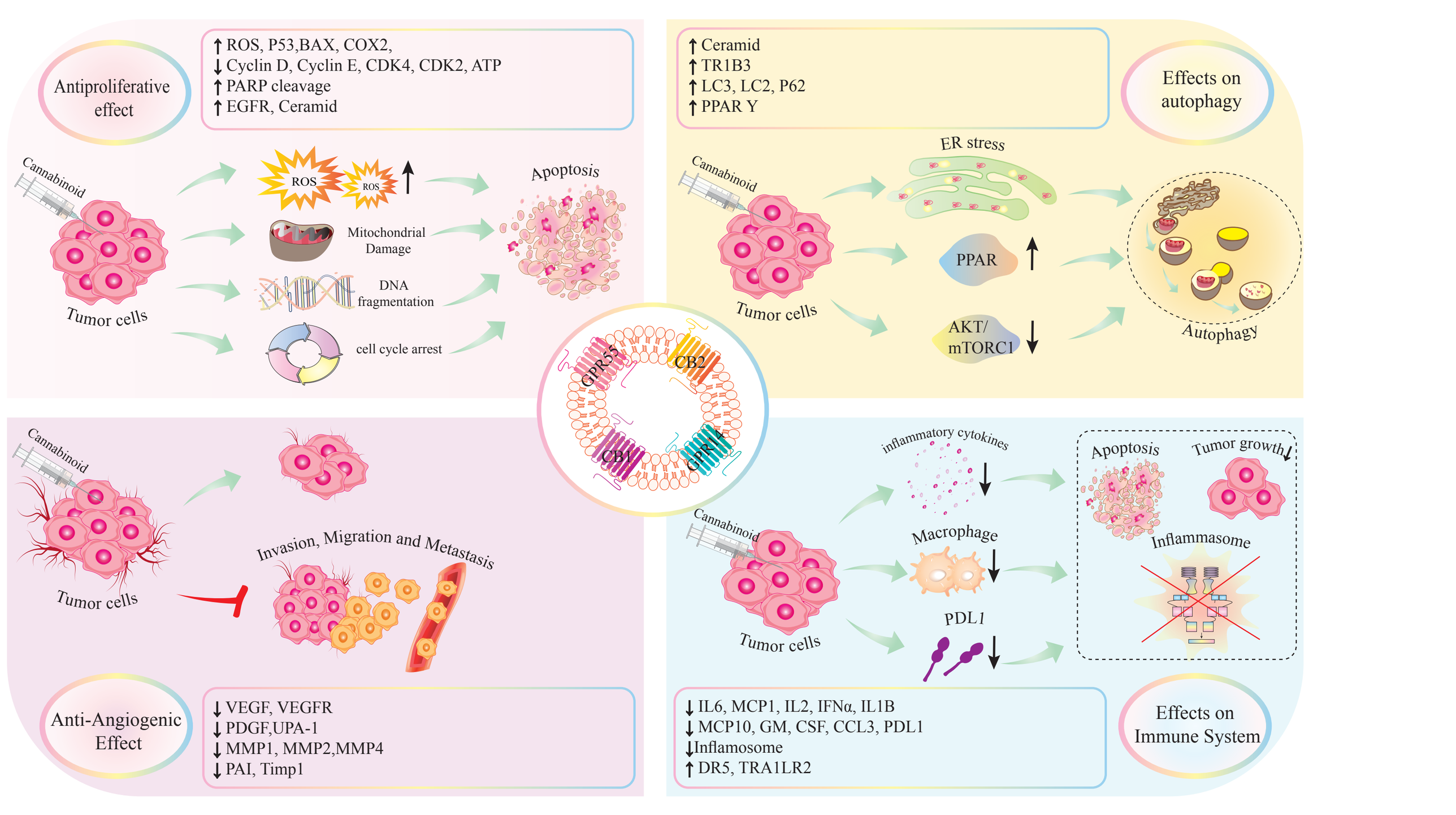

Antiproliferative effect
↑ROS, P53,BAX, COX2,
↓Cyclin D, Cyclin E, CDK4, CDK2, ATP
↑PARP cleavage
↑EGFR, Ceramid
Cannabinoid
Tumor cells
ROS
ROS
Mitochondrial Damage
DNA fragmentation
cell cycle arrest
Apoptosis
↑Ceramid
↑TR1B3
↑LC3, LC2, P62
↑PPAR Y
Effects on autophagy
ER stress
PPAR
AKT/ mTORC1
Autophagy
GPR55
CB2
CB1
GPR18
Anti-Angiogenic Effect
↓VEGF, VEGFR
↓PDGF,UPA-1
↓MMP1, MMP2,MMP4
↓PAI, Timp1
Invasion, Migration and Metastasis
inflammatory cytokines
Macrophage
PDL1
Apoptosis
Tumor growth
Inflammasome
↓IL6, MCP1, IL2, IFNα, IL1B
↓MCP10, GM, CSF, CCL3, PDL1
↓Inflamosome
↑DR5, TRA1LR2
Effects on Immune System

Co-stimulatory molecules
IDO +
MHC II
Immature DC
Mature DC

T helper 1
T helper 2
T helper 17
T regulatory
CD8 T cell
NK T cell

Macrophage
Neutrophil

* Production of MIP-2, IL-1β, IL-8, IFNγ, IL-12.

BAFF-R
BAFF
TACI
B Cell
BCMA
BAFF

* Immature B cell survival, differentiation and maturation.
* Plasma cell survival.
* Antibody production.
* Bcell survival and proliferation.

* Activation and proliferation in inflammatory conditions.
* Production of IL-1, IL-4, IL-6, IL-10, IL-12, IL-17, IL-21, TNFα, IFNγ.

HO
OH
O
OCH_3
H_3CO

HSPG
TLRs
Wnt
LRP
R-Spondin
Frizzled
TNF
LGR
Growth Factors
TNF Receptors
GFRs
LRP

Autophagy
Ribosome biogenesis
Mitochondrial biogenesis
Protein synthesis
Lipid synthesis
mTOR

NOD
NLRs
Pro-Caspase
Active caspase
IL-1β
IL-8

TAK
TAB
IKK
MKK
IRFS
NF-κB
P50
P65
JNK
P38
ERK

TAK
TAB
TLRs
IKK
IRAK
MKK
TANK
TRAF
TBK
JNK
P38
IRFS
NF-κB
P50
P65

Nucleotid synthesis
Transcription and production of TNFα, IFNγ, IL1, IL2
Transcription of iNOS gene
iNOS mRNA
iNOS-Protein
$O_2^{\cdot-}$
NO
H_2O_2
$OONO^-$

Cytosol
Nucleus

Periphery

Blood

Blood brain barrier

Parenchyma

(I) Relapcing disease

(II) Progressive disease

Ab: Antibody
ASC: Astrocyte
CP-EC: Choroid plexus epithelial cell
CSF: Cerebrospinal fluid
EC: Endothelial cell
ES: Epitope spreading
fDC: Follicular dendritic cell
GL: Glia limitans
GRB: Granzyme B
SAS: Subarachnoid space
Mic: Microglia
MMP: Matrix metalloproteinases
ODC: Oligodendrocyte
OPC: Oligodendrocyte precursor cell
PBM: parenchymal basement membrane
PC: Plasma cell
Pfn: Perforin

B7
CD28
MHC II
TCR
CD40L
CD40

CD4⁺ Treg
CD8⁺ Treg
B reg
A Treg pool
B
APC
IL-12, IL-23, IL6
IL1, TGF-β
Th1
CD25
Th17
S1PR, CD52
MO-Mϕ
B Cell
CD25, CD20
TCD8⁺
CD8⁺

C
TNF-α
IFN-γ
MMP-2
MMP-9
Th1
VLA4
VCAM-1
D
Th17
MCAM-1
LM-411
LFA-1
ICAM-1
IL-17
IFN-γ
MMP-2
MMP-9
E
VLA-4
VCAM-1
F
VLA-4
VCAM-1
PSGL-1
P-Selectin
G
Th17
blood
EC
H PVS
I
MMP
PBM
CCR6
CCL20
CP-EC
Th17
CSF
Blood-CSF barrier
Epidural space
Dural mater
Aracnoid mater
Q
B Cell
T Cell
SAS
fDC
Meningeal follicle
Pia mater
Ab
Soluble factors
J
DC
Th1
DC
Th17
TNF-α
IFN-γ
GM-CSF
IL-17,
IFN-γ
GM-CSF
IL-22
Mϕ-Mic
Mϕ-Mic
RNS, ROS
TNF-α, IL-1β
Glu, IP10
MCP1,MCP3
IL-23, IL12,
MMP
Asc
PC
Glu
NO, IL-23
IL-12
TCD8⁺
Th17
IL-17,
IFN-γ
GM-CSF
ES
P
L
PC
N
GrB
Pfn
TCD8⁺
FAS-L
FAS
Neutrophil
Elstase
Cathepsin G
ROS
R
RNS,
ROS
TNF-α,
IL-1β
k
OPC
Complement activation
C5b-9
myelin opsonization
M
Mϕ-Mic
NO
O
T
S
Neurotransmitter
Neurotrophins
ODC
Myelin damage
Axonal damage
U
Fe^{2+}
$OH^{\bullet}$
$ONOO^{\bullet\bullet}$

Neuron

Vessel

LDH

Pyruvate

Lactate

MCT2

ATP

Mitochondrion

O_2

O_2

Glu

Gln

Glu

GluR

Glc

GlcT1

Glc

Glc

Glu from the neuron

GLT-1

K^+

Na^+

Na^+/k^+-ATPase

GlcT1

MCT1/4

Na^+

Lactate

LDH_A

Pyruvate

Gln

GLT-1

Na^+

Glu

OH^-/HCO_3^-

K^+

Na^+

PGK

$ADP+P_i$

ATP

Na^+/k^+-ATPase

K^+

Na^+

K^+

ATP

$ADP+P_i$

Na^+

P

P

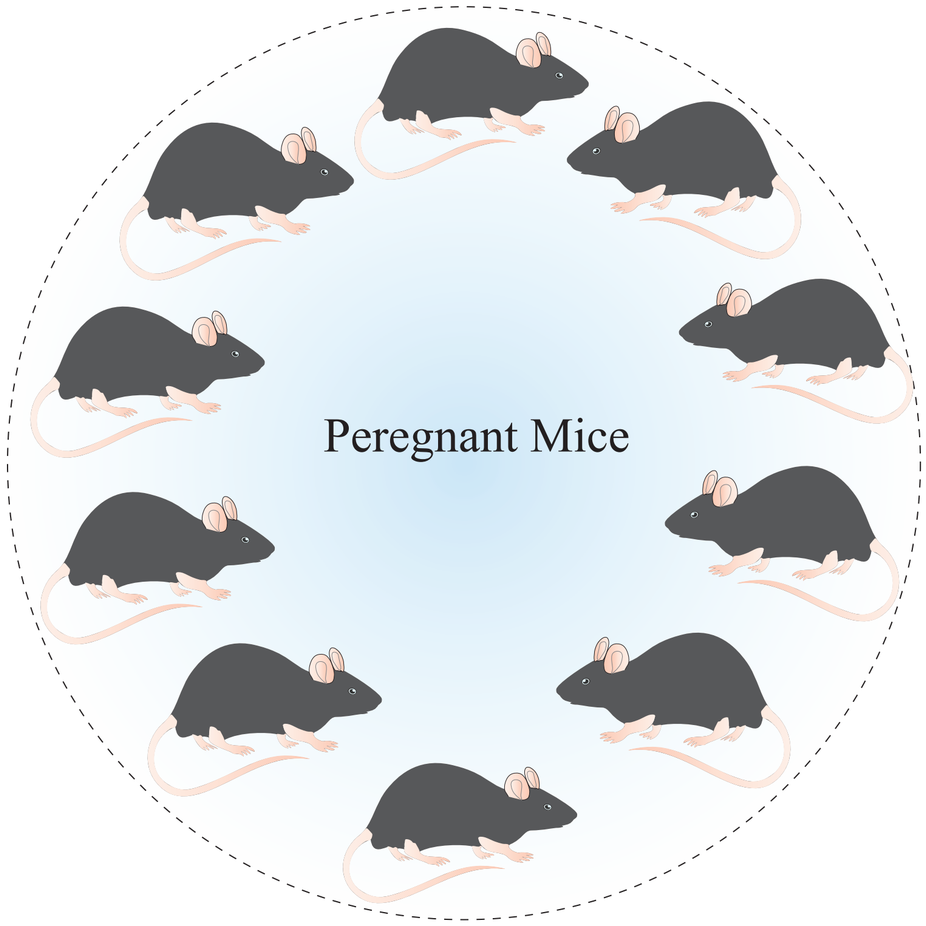
Glc-6-p

Glycolysis

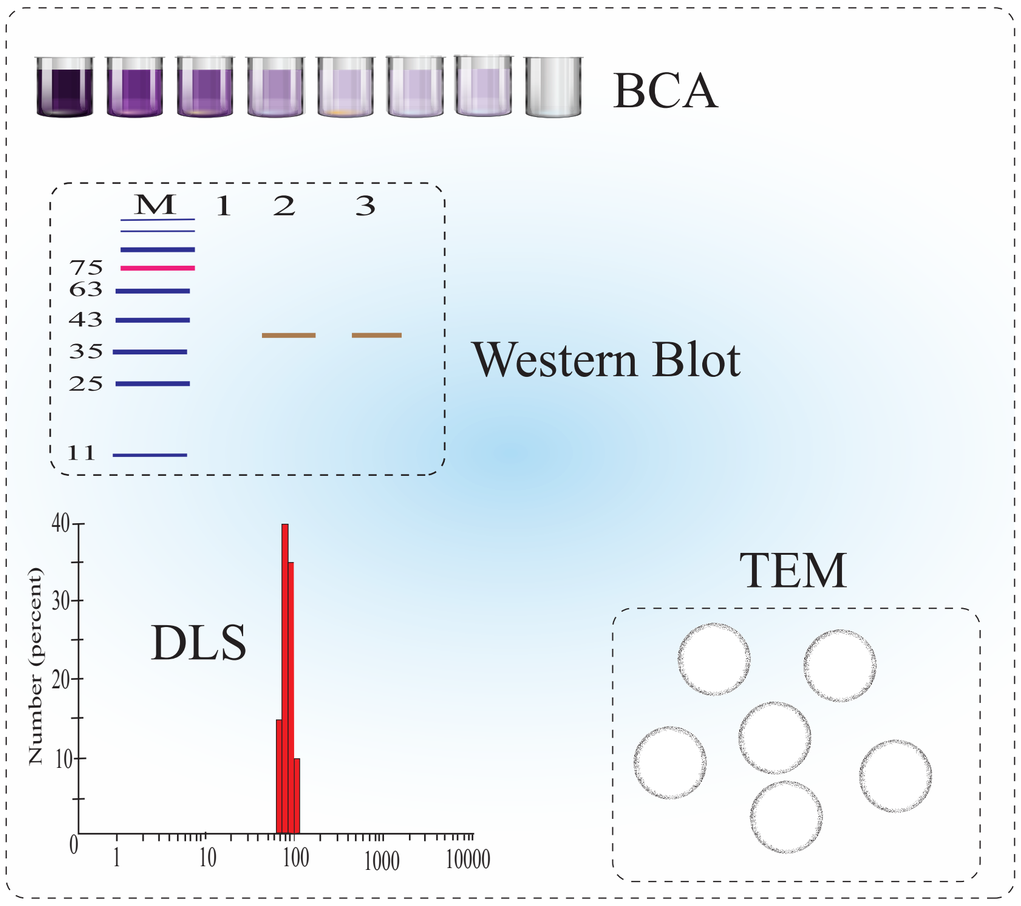
GlgP

Glycogen

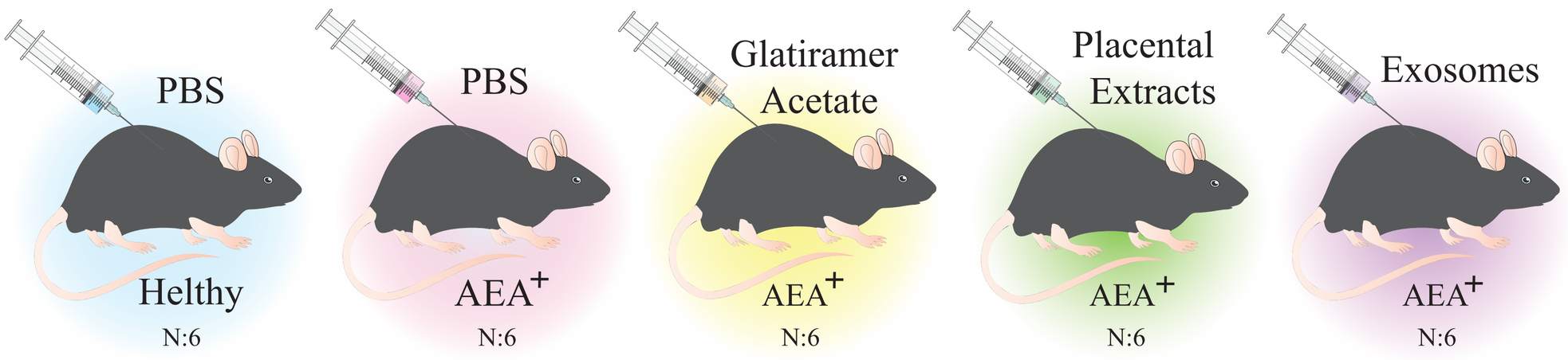
Astrocyte



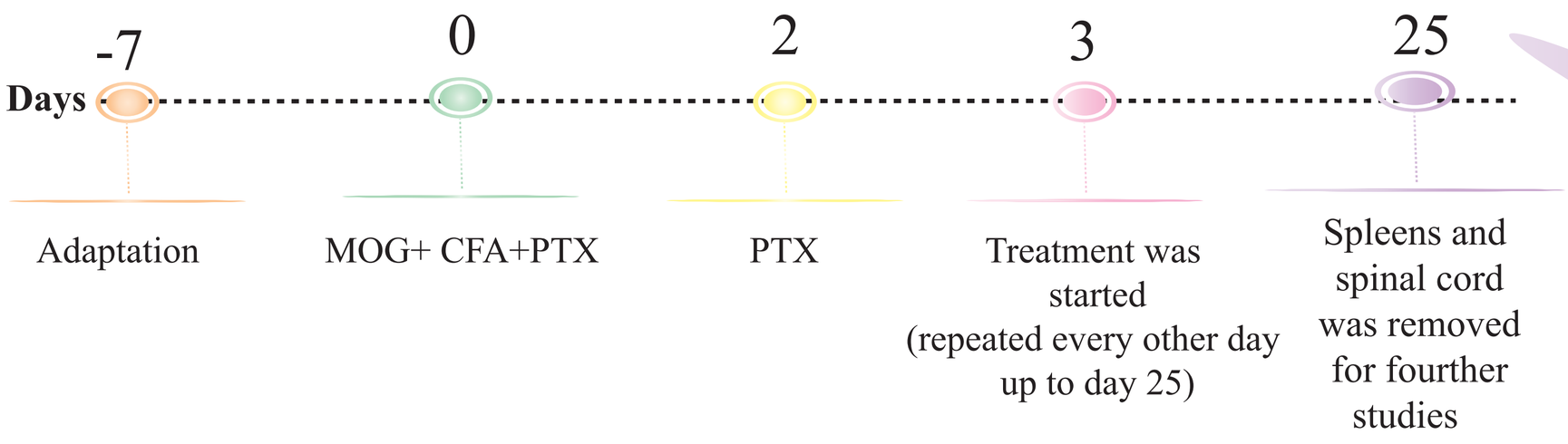
Isolation and characterization of placental extract and exosomes



Thirty mice were randomaly classified into 5 groups which recived following treatments.



Induction and Evaluation of EAE

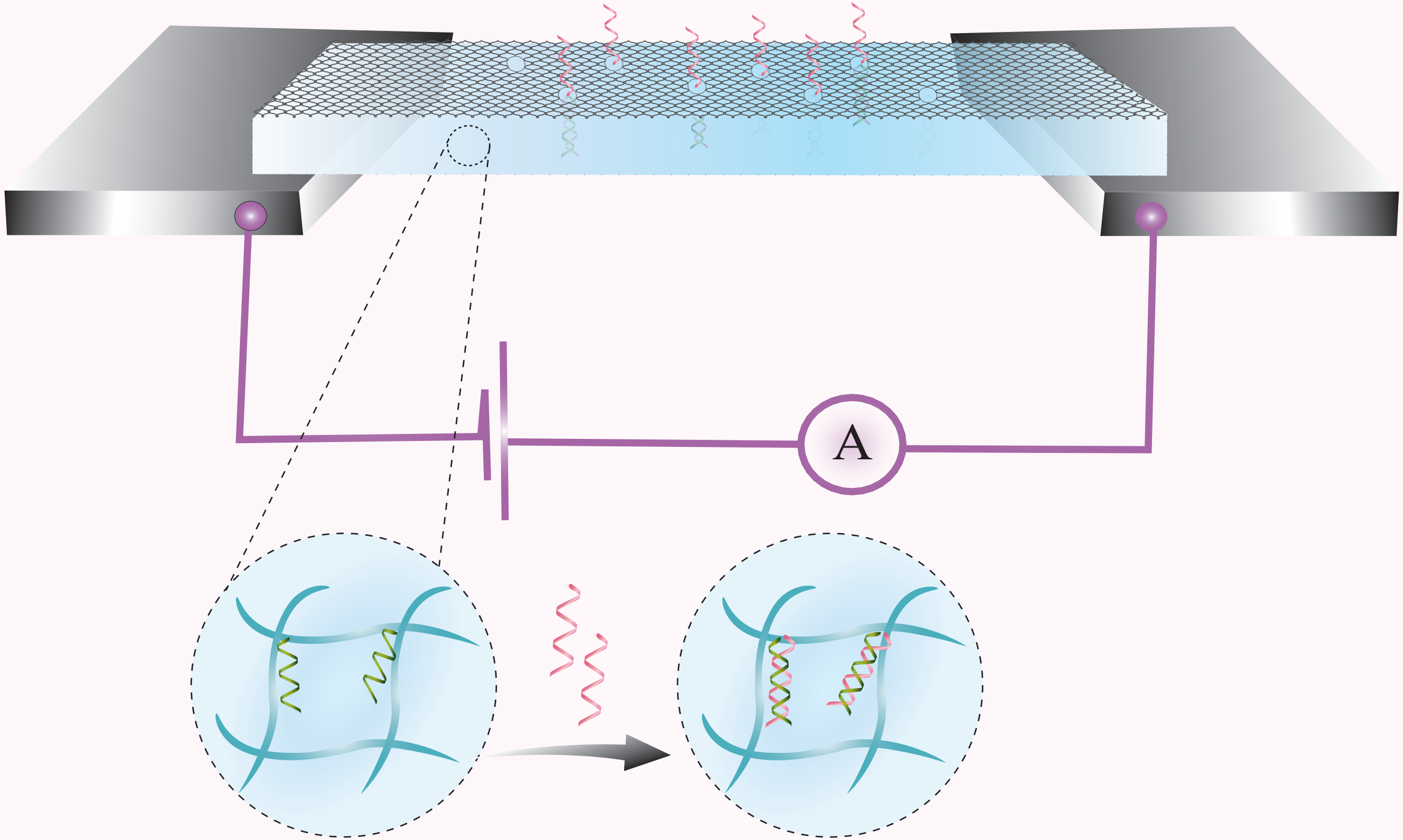


1-Scoring
-Assessment of body weight and clinical signs

2-Flow cytometry
-Evaluation of the frequency of Treg cells

3-Molecular assessment (RT-PCR)
-Evaluation of the expression of IL-17, IFN-γ and miR-326

4-Histopathological assessment
-LFB and H&E staining for the evaluation of demyelination and inflammatory cells infiltration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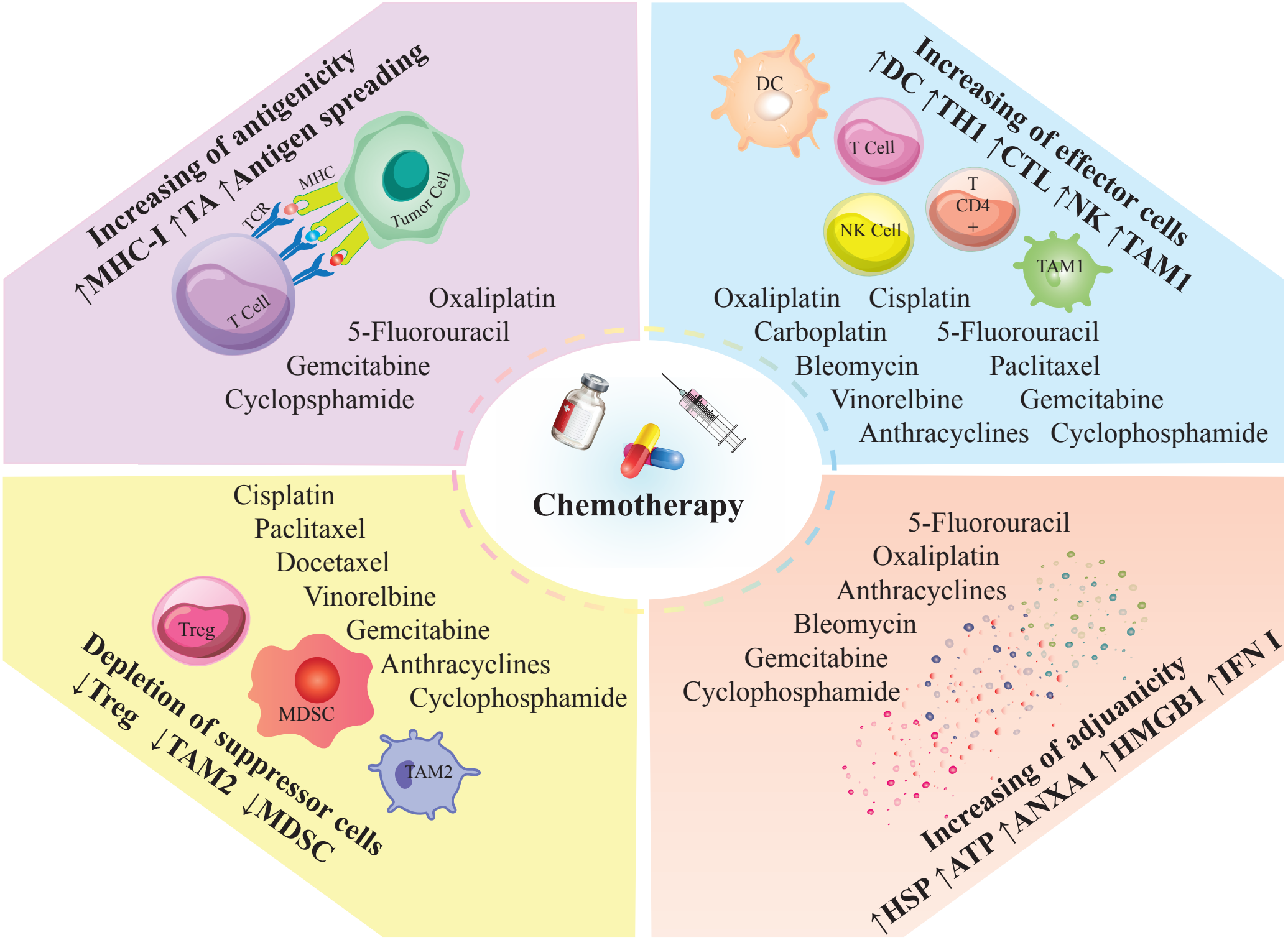
Increasing of antigenicity
↑MHC-I ↑TA ↑Antigen spreading
MHC
TCR
Tumor Cell
T Cell
Oxaliplatin
5-Fluorouracil
Gemcitabine
Cyclopsphamide
Increasing of effector cells
↑DC ↑TH1 ↑CTL ↑NK ↑TAM1
DC
T Cell
T CD4 +
NK Cell
TAM1
Oxaliplatin
Cisplatin
Carboplatin
5-Fluorouracil
Bleomycin
Paclitaxel
Vinorelbine
Gemcitabine
Anthracyclines
Cyclophosphamide
Chemotherapy
Cisplatin
Paclitaxel
Docetaxel
Vinorelbine
Gemcitabine
Anthracyclines
Cyclophosphamide
Treg
MDSC
TAM2
Depletion of suppressor cells
↓Treg ↓TAM2 ↓MDSC
5-Fluorouracil
Oxaliplatin
Anthracyclines
Bleomycin
Gemcitabine
Cyclophosphamide
Increasing of adjuanicity
↑HSP ↑ATP ↑ANXA1 ↑HMGB1 ↑IFN I