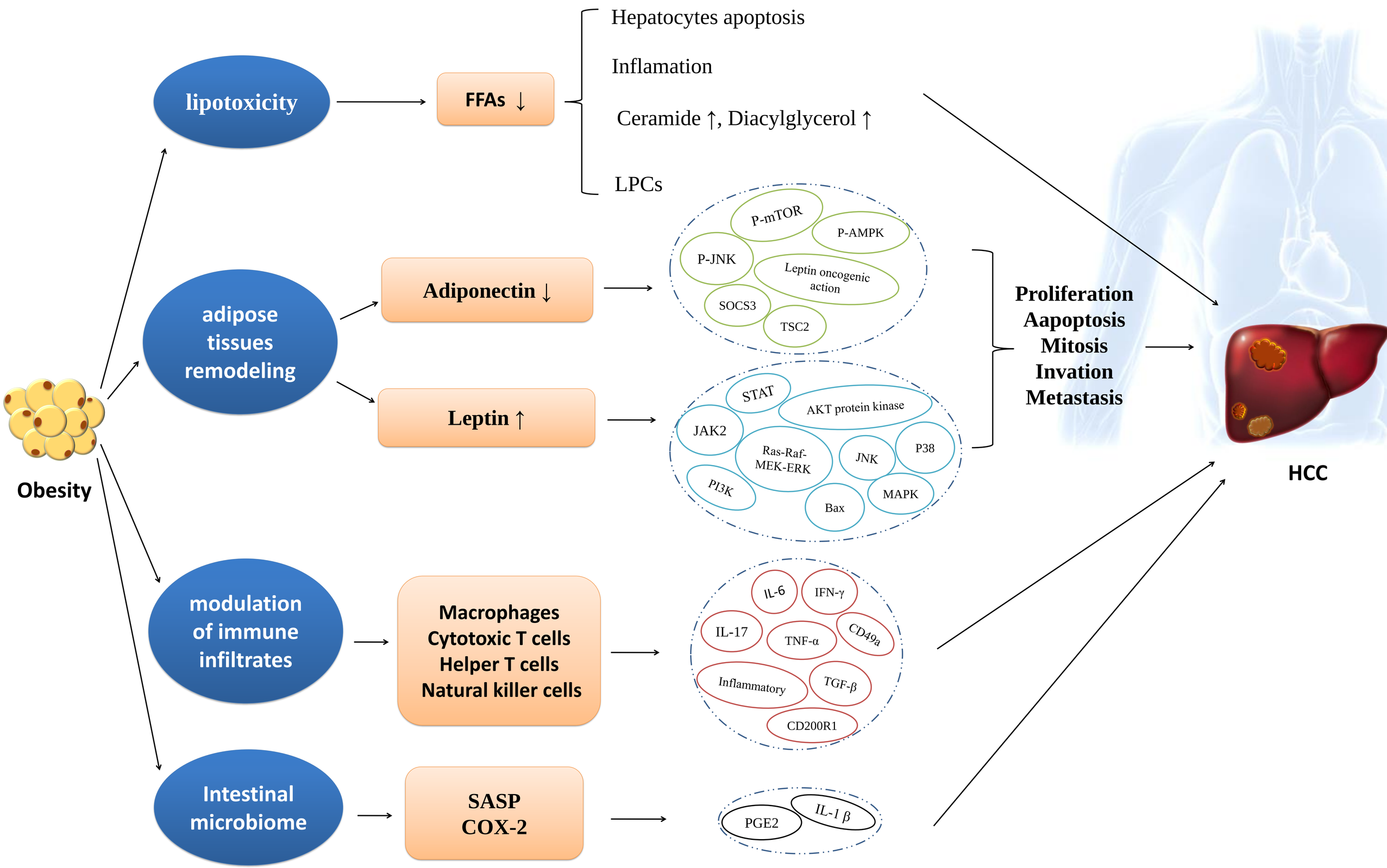
Obesity
lipotoxicity
FFAs ↓
Hepatocytes apoptosis
Inflamation
Ceramide ↑, Diacylglycerol ↑
LPCs
adipose tissues remodeling
Adiponectin ↓
Leptin ↑
P-mTOR
P-AMPK
P-JNK
Leptin oncogenic action
SOCS3
TSC2
STAT
AKT protein kinase
JAK2
Ras-Raf-MEK-ERK
JNK
P38
PI3K
Bax
MAPK
Proliferation
Aapoptosis
Mitosis
Invation
Metastasis
HCC
modulation of immune infiltrates
Macrophages
Cytotoxic T cells
Helper T cells
Natural killer cells
IL-6
IFN-γ
IL-17
TNF-α
CD49a
Inflammatory
TGF-β
CD200R1
Intestinal microbiome
SASP
COX-2
PGE2
IL-1 β