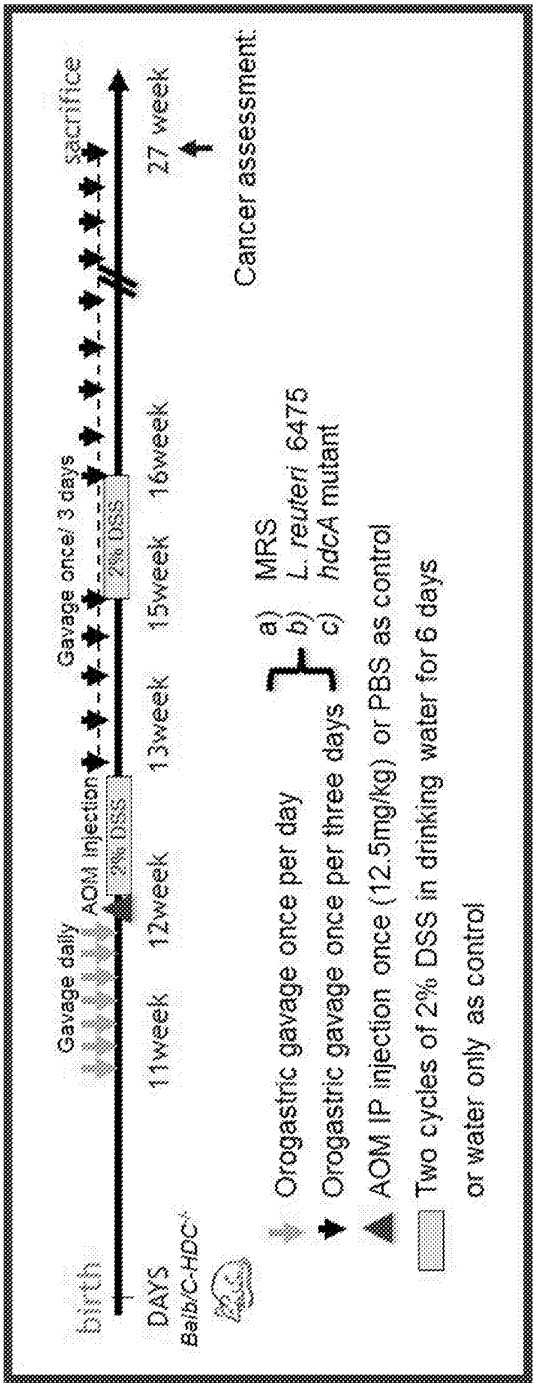

birth
Gavage daily
AOM injection
2% DSS
Gavage once/ 3 days
2% DSS
sacrifice
DAYS
Balb/C-HDC-/-
1
11week
12week
13week
15week
16week
27 week
Cancer assessment:
Orogastric gavage once per day
Orogastric gavage once per three days
a) MRS
b) L. reuteri 6475
c) hdcA mutant
AOM IP injection once (12.5mg/kg) or PBS as control
Two cycles of 2% DSS in drinking water for 6 days
or water only as control

Figure 1A

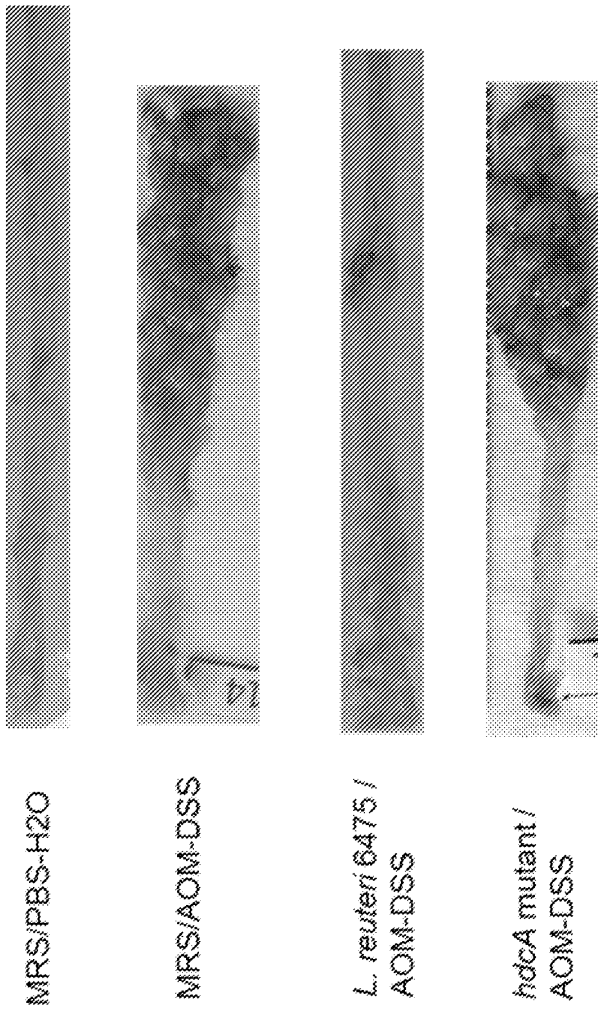
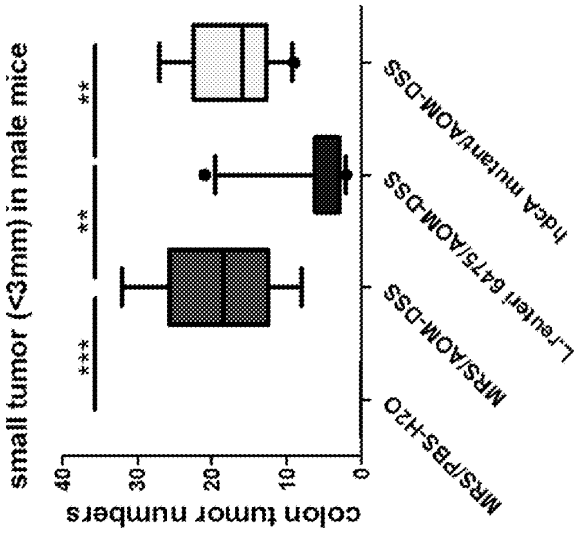

MRS/PBS-H2O
MRS/AOM-DSS
L. reuteri 6475 / AOM-DSS
hdcA mutant / AOM-DSS

Figure 1B


small tumor (<3mm) in male mice
colon tumor numbers
0
10
20
30
40
***
**
**
MRS/PBS-H2O
MRS/AOM-DSS
L.reuteri 6475/AOM-DSS
hdcA mutantAOM-DSS

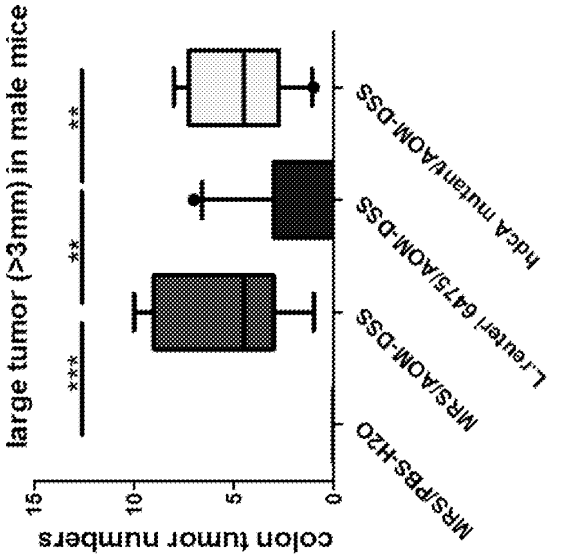

large tumor (>3mm) in male mice
colon tumor numbers
0
5
10
15
***
**
**
MRS/PBS-H2O
MRS/AOM-DSS
L.reuteri 6475/AOM-DSS
hdcA mutantAOM-DSS

Figure 1C

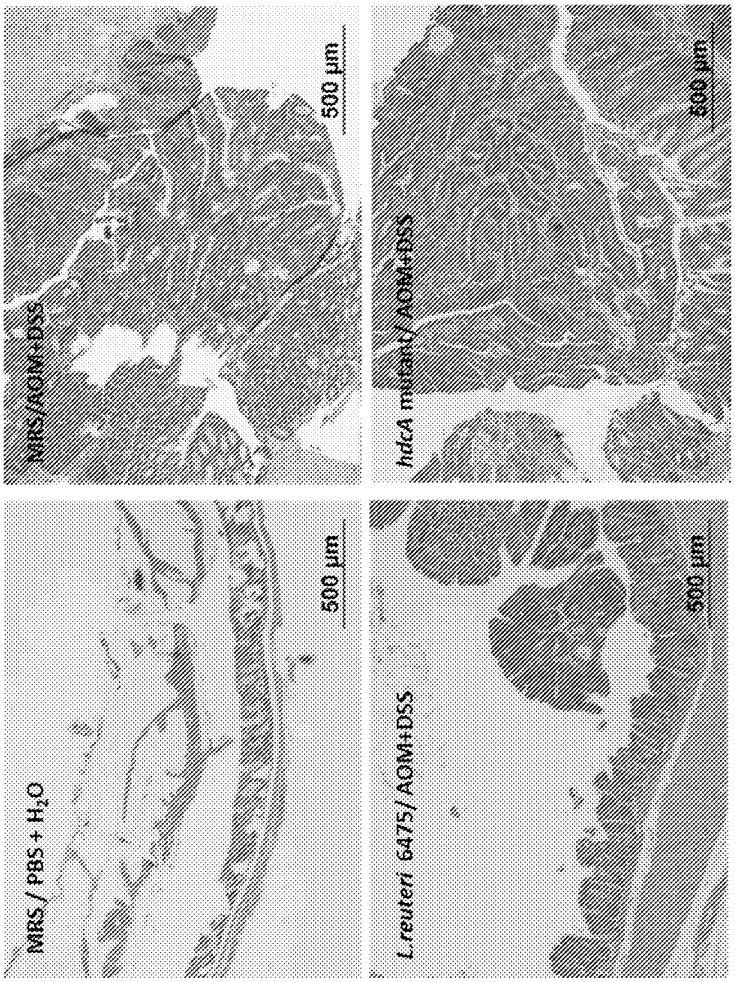

MRS/AOM+DSS
500 µm
hdcA mutant/ AOM+DSS
500 µm
MRS/ PBS + H2O
500 µm
L.reuteri 6475/ AOM+DSS
500 µm

Figure 1D

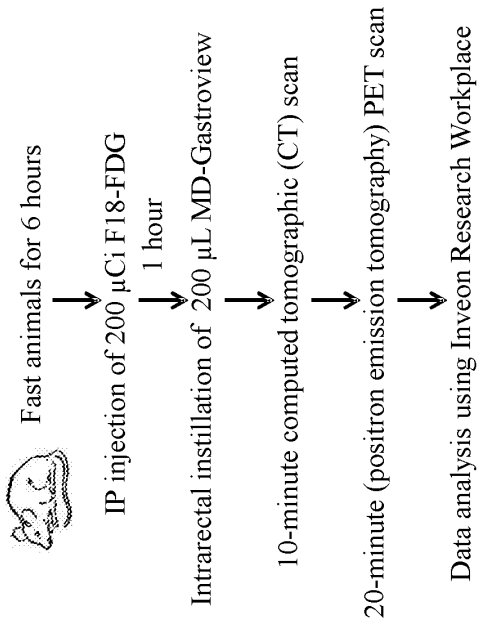

Fast animals for 6 hours
IP injection of 200 µCi F18-FDG
1 hour
Intrarectal instillation of 200 µL MD-Gastroview
10-minute computed tomographic (CT) scan
20-minute (positron emission tomography) PET scan
Data analysis using Inveon Research Workplace

Figure 2A


6.0000
3.0000
0.0000
Color bar
MRS/PBS+H2O
MRS/AOM+DSS
L. reuteri 6475/ AOM+DSS
hdc4 mutant/ AOM+DSS

Figure 2B

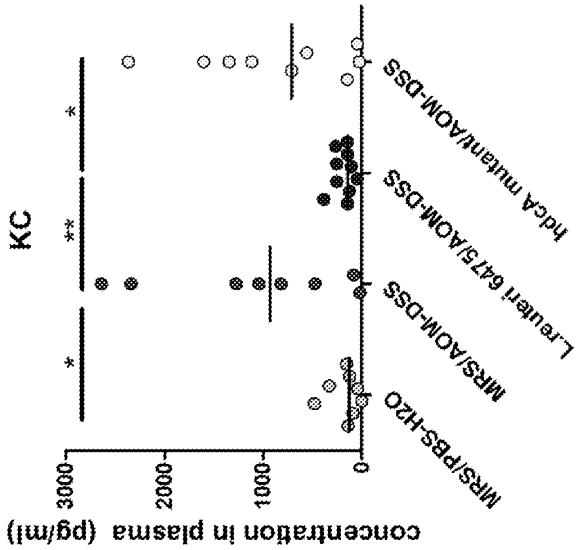


Figure 3A

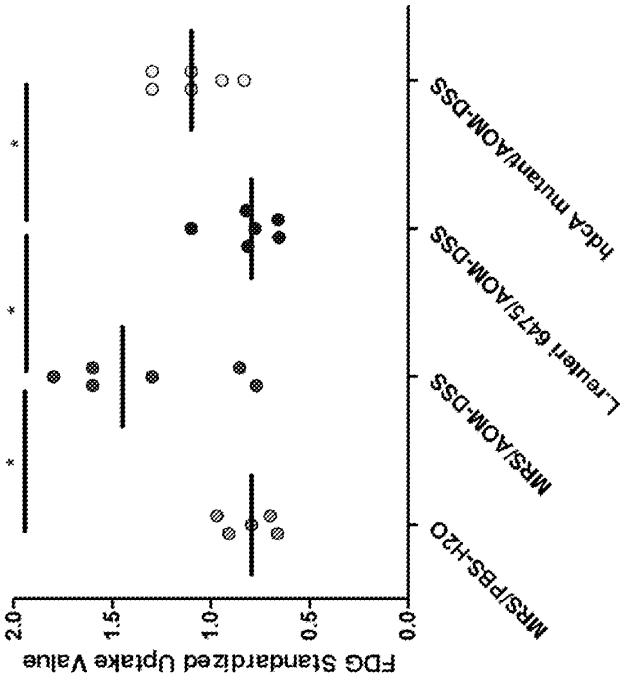


Figure 2C

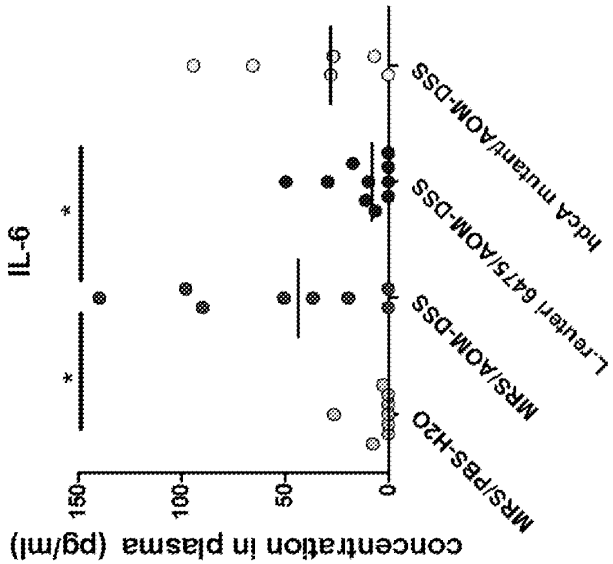


Figure 3C

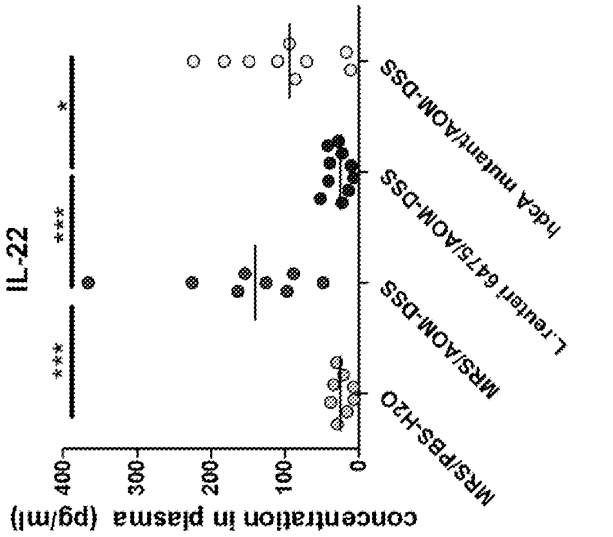


Figure 3B

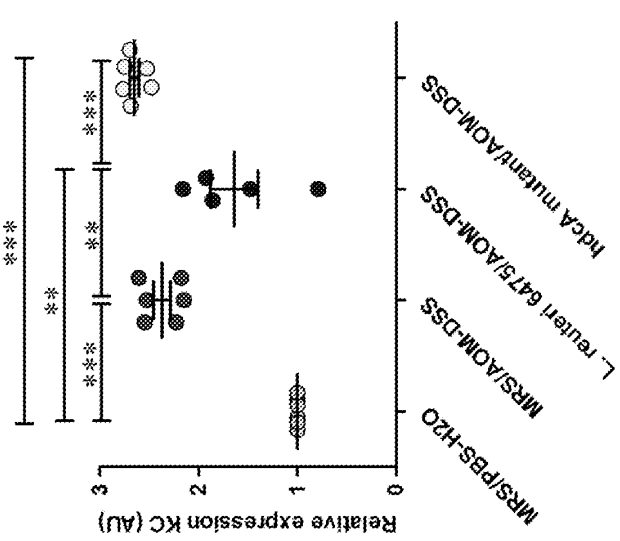


Figure 4A

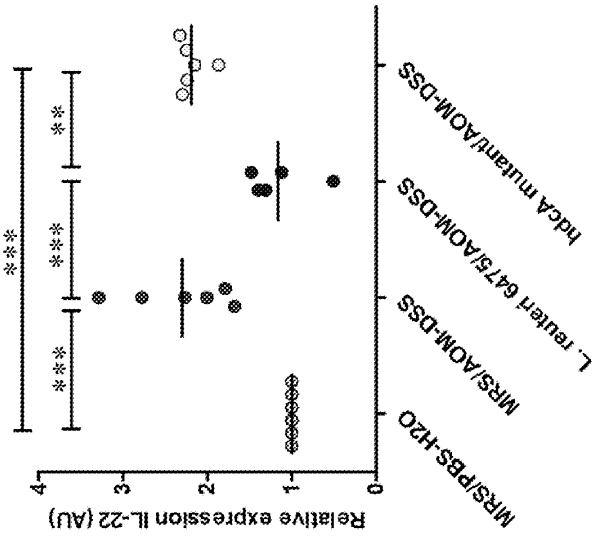


Figure 4B

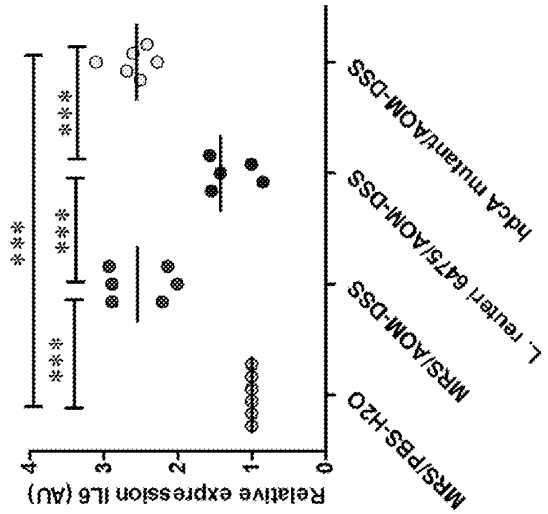


Figure 4C

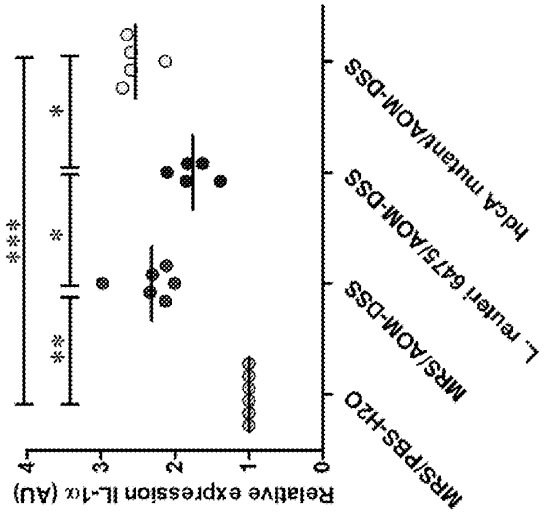


Figure 4E

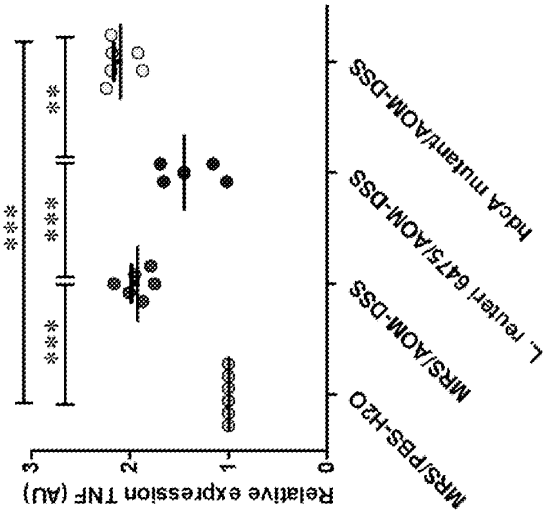


Figure 4D

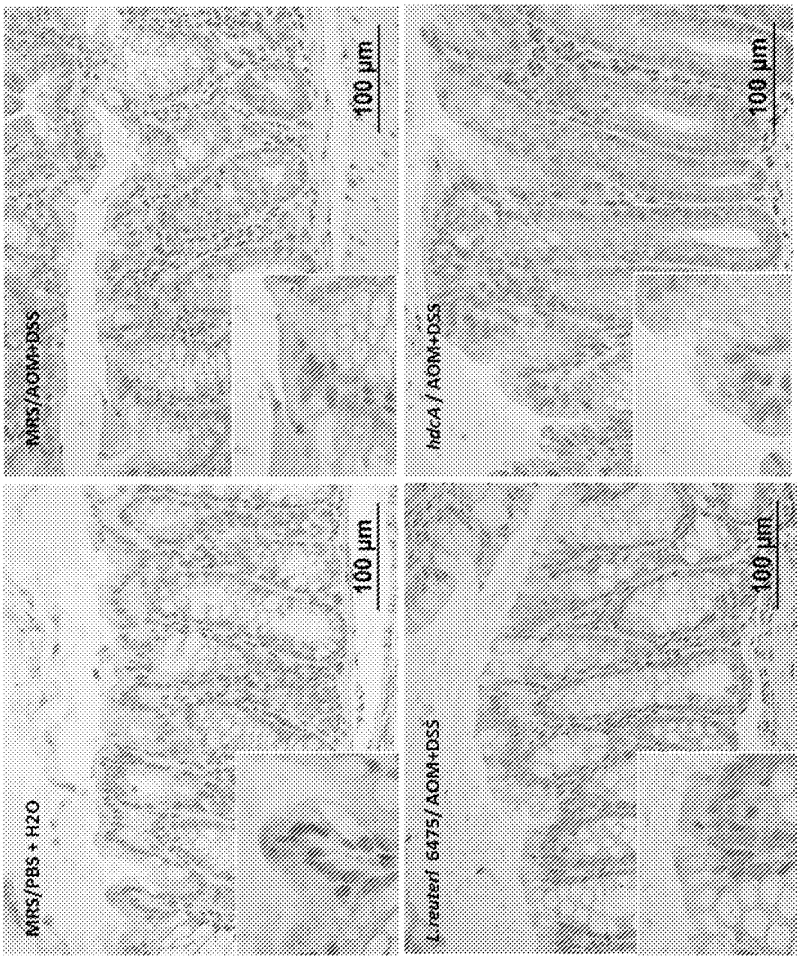


Figure 5A

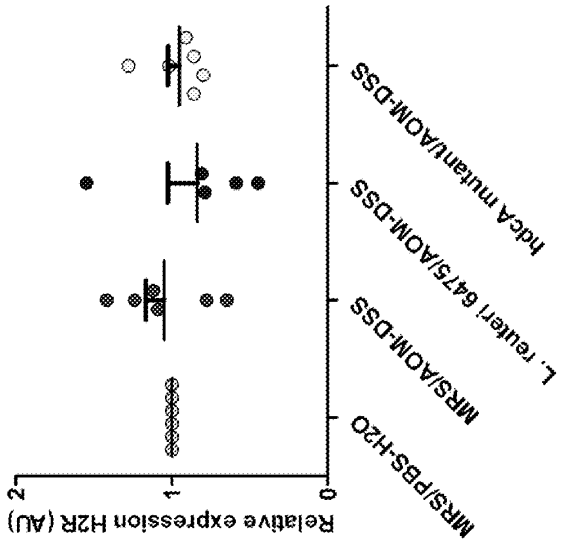


Figure 5B

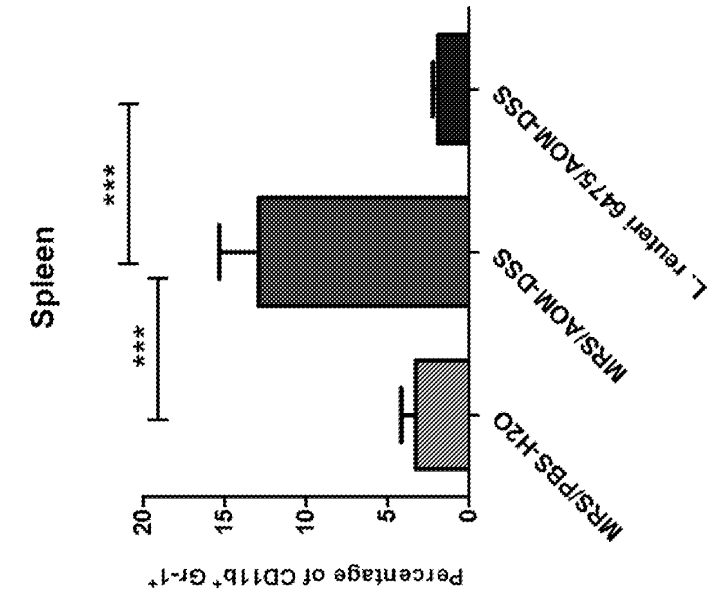


Figure 6B

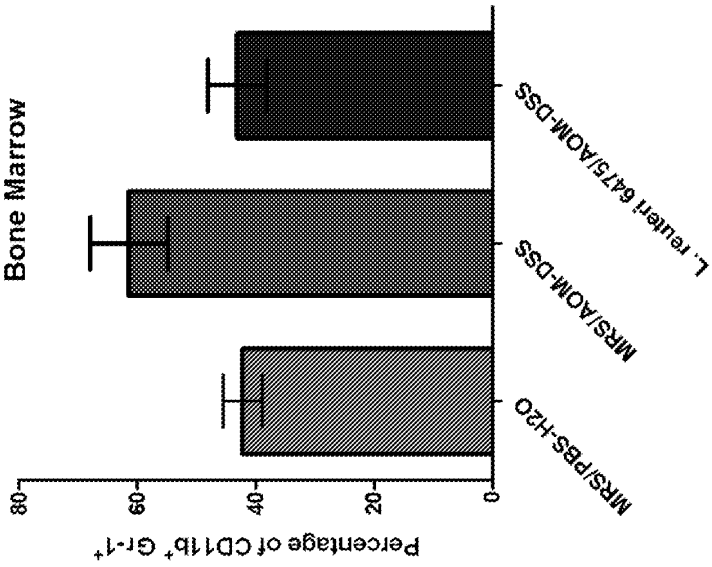


Figure 6A

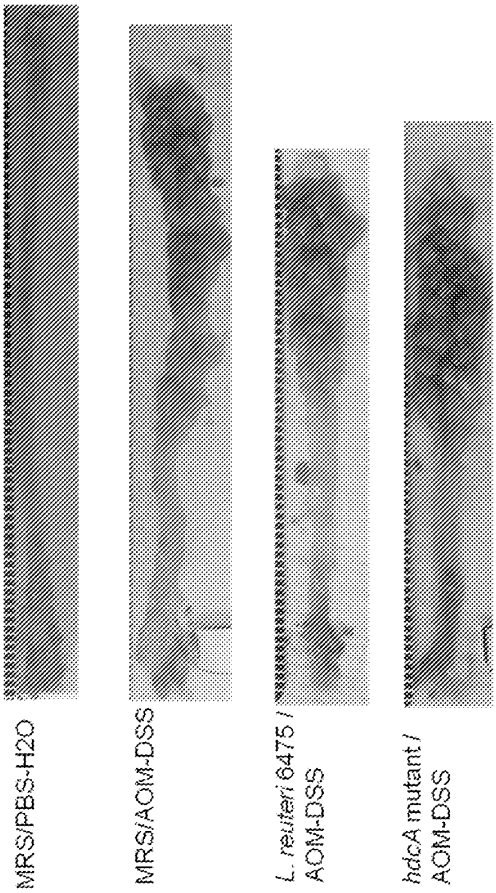

MRS/PBS-H2O
MRS/AOM-DSS
L. reuteri 6475 / AOM-DSS
hdcA mutant / AOM-DSS

Figure 7A

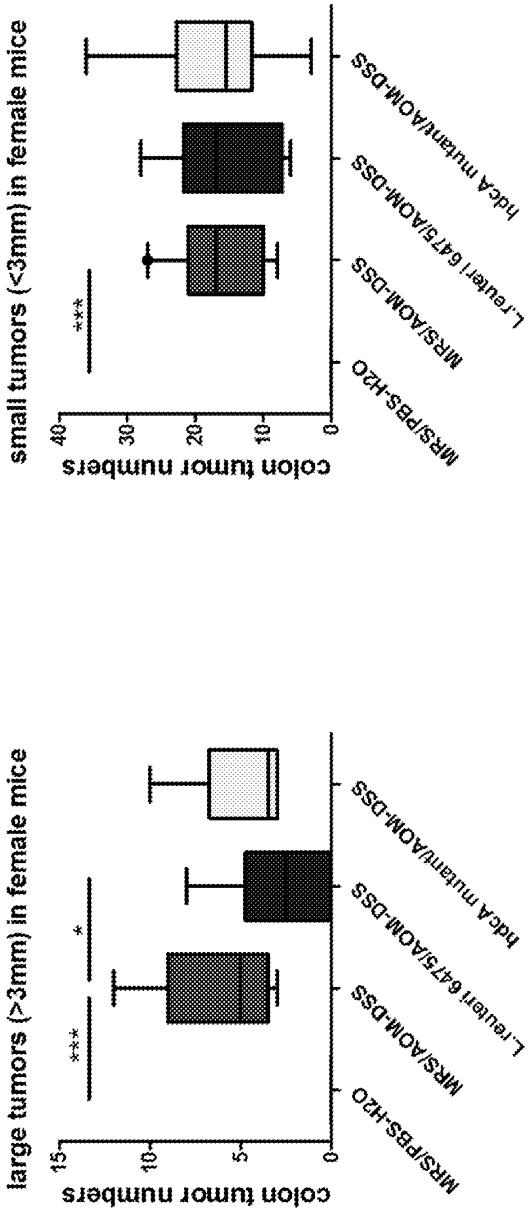

small tumors (<3mm) in female mice
colon tumor numbers
0
10
20
30
40
***
MRS/PBS-H2O
MRS/AOM-DSS
L.reuteri 6475/AOM-DSS
hdcA mutant/AOM-DSS
large tumors (>3mm) in female mice
colon tumor numbers
0
5
10
15
***
*
MRS/PBS-H2O
MRS/AOM-DSS
L.reuteri 6475/AOM-DSS
hdcA mutant/AOM-DSS

Figure 7B

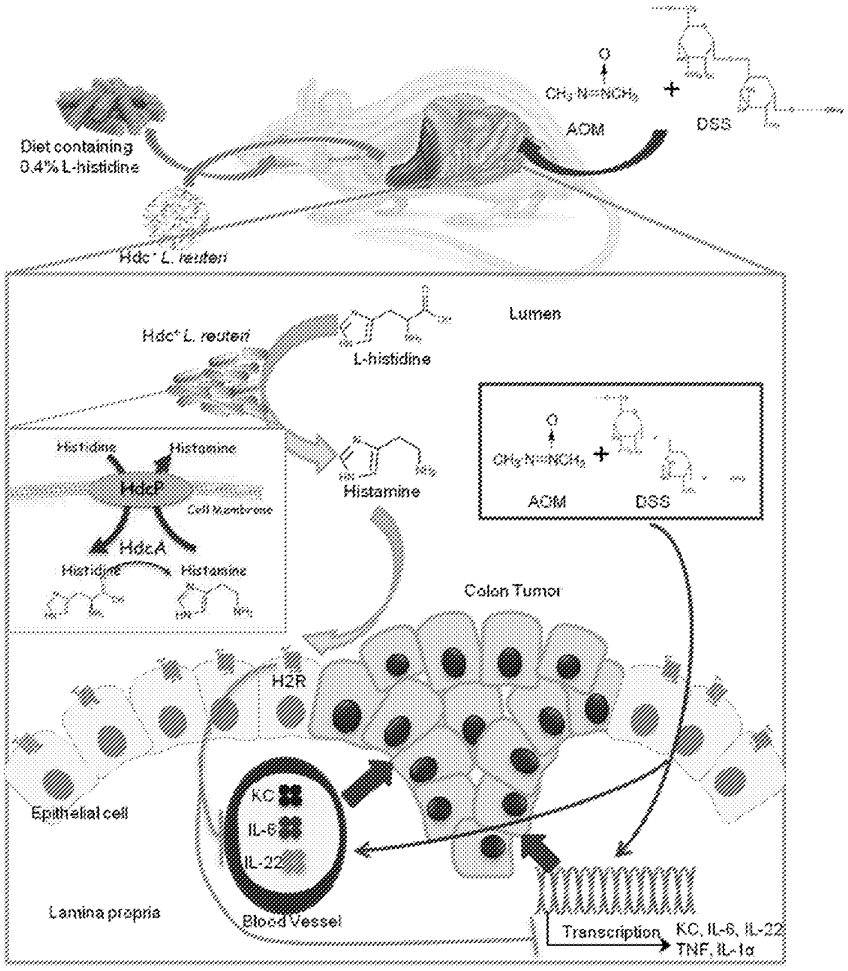

Diet containing
0.4% L-histidine
Hdc+ L. reuteri
ACM
DSS
Lumen
Hdc+ L. reuteri
L-histidine
Histidine
Histamine
HdcP
Cell Membrane
HdcA
Histidine
Histamine
Histamine
ACM
DSS
Colon Tumor
H2R
Epithelial cell
KC
IL-6
IL-22
Lamina propria
Blood Vessel
Transcription
KC, IL-6, IL-22
TNF, IL-1α

Figure 8

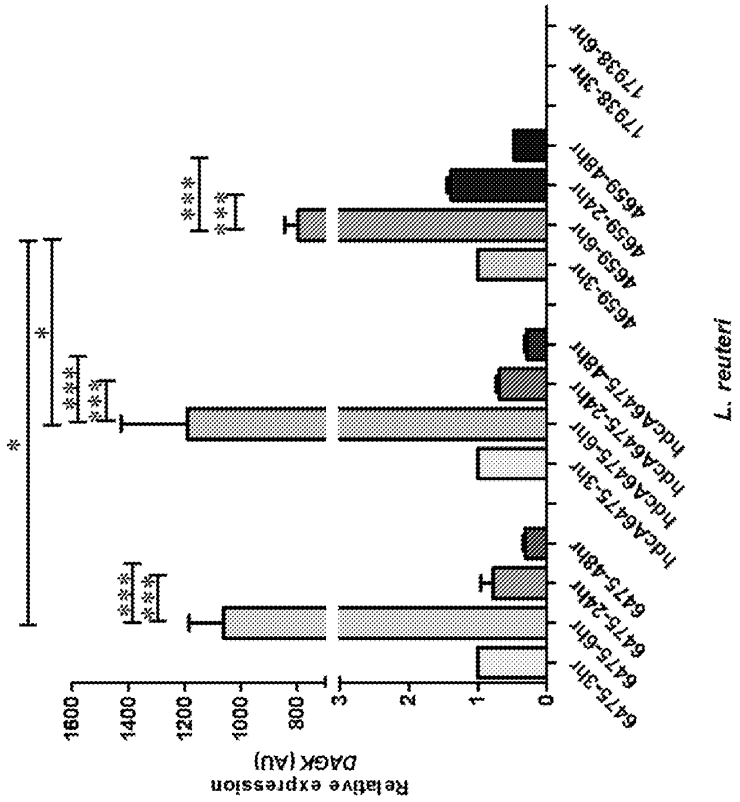

Relative expression
DAGK (AU)
1600
1400
1200
1000
800
3
2
1
0
6475-3hr
6475-6hr
6475-24hr
6475-48hr
hdcA6475-3hr
hdcA6475-6hr
hdcA6475-24hr
hdcA6475-48hr
4659-3hr
4659-6hr
4659-24hr
4659-48hr
17938-3hr
17938-6hr
L. reuteri
*
*
***
**
***
**
***
**

Figure 9

MDSRDKHQTE KNHHLIQAMR HAIDGIIQVL REERNMRYHL LAACLAIIMS ALLQISAMEW LWILLAIFVV FTSEFLNTVT EAVTDLIVDH
HYELNVKKAK DVAAGGVLIS AIFSVLVGLI IFIPRILAII R

Figure 10